Arizona Department of Transportation
Traffic Group
206 S. 17th Avenue
Mail Drop 063R
Phoenix, AZ 85007

Sign Request Packet

Please find enclosed information to help you with your "Sign Request" application. This packet is intended to provide you with information on the type of signs that will be considered and on the standards and specifications that you should construct them to.

Please contact the Arizona Department of Transportation's District Office that oversees the location of the requested sign for the application and submittal requirements.

The following is a list of district offices and their phone numbers:

Contact list

Phoenix District Permits & Utilities	(602) 712 ~ 7522
Flagstaff District Office	(928) 774 ~ 1491
Prescott District Office	(928) 777 ~ 5861
Tucson District Office	(520) 388 ~ 4237
Globe District Office	(928) 402 ~ 5608
Holbrook District Office	(928) 524 ~ 5400
Kingman District Office	(928) 681 ~ 6010
Safford District Office	(928) 428 ~ 5470
Yuma District Office	(928) 317 ~ 2100

The following is a list of the enclosed information:

- List of local signing contractors and appropriate contacts
- Special Provision Section 608 Sign Panel
- Special Provision Section 1007 Retroreflective Sheeting
- ADOT Traffic Engineering Policies, Guidelines, and Procedures Section 332 Place Names
- ADOT Traffic Engineering Policies, Guidelines, and Procedures Section 336 Supplemental and Miscellaneous Guide Signs
- ADOT Traffic Engineering Policies, Guidelines, and Procedures Section 380 Sign Materials
- Standard Drawings: S-1 (3 sheets), S-2 (2 sheets), S-3 (4 sheets), S-4, S-5, S-6, S-7, S-8 (4 sheets).

For additional copies, please contact Scott Nodes at (602)712-8319.

Following is a list of local signing contractors and appropriate contacts:

Company	Contact	Phone
5 G's	Gail Gray	602-437-0201
Abbco Sign Group, Inc.	Don Abbott	602-316-5452
Contractor's West	Butch Hudson	480-969-6300
Arizona Highway Safety	Rich Matthews	928-636-8934

* USE IN CONJUNCTION WITH STORED SPECIFICATION 1007REFS *

(608PANEL, 02/11/10)

SECTION 608 - SIGN PANELS:

608-1 Description: of the Standard Specifications is revised to read:

The work under this section shall consist of furnishing and installing sign panels in accordance with the details shown on the plans and the requirements set forth herein.

The sign panels shall be of the following types:

- Extruded Aluminum Sign Panels with Direct applied, Digitally Imaged, or Demountable Characters
- Flat Sheet Aluminum Sign Panels With Direct-Applied, Digitally Imaged, Electronic Cut, or Screen-Printed Characters
- Warning, Marker, and Regulatory Sign Panels
- Route Shields for Installation on Sign Panels
- EXIT ONLY Panels for Installation on Sign Panels

608-2.01 General: of the Standard Specifications is modified to add:

Signs shall be fabricated in accordance with the recommendations established by the manufacturer of the sign sheeting. All processes and materials used to make a sign shall in no way impact the performance, uniform appearance (day and night), or durability of the sheeting, or invalidate the sign sheeting manufacturers' warranty.

All sheeting used for background and legend shall be from the same manufacturer, and shall be covered with a protective or anti-graffiti film from the same manufacturer. Protective and anti-graffiti film other than those specified by the manufacturer will not be allowed. Protective overlays and anti-graffiti films shall be applied according to the manufacturers' recommendations.

All text and numerals shall all be installed at the same orientation: either zero degrees or 90 degrees.

Design of letters and numbers shall be in accordance with the project plans with a tolerance of ± 1/16th of an inch.

608-2.02 Extruded Aluminum Sign Panels With Demountable Characters: the title of the Standard Specifications is revised to read:

608-2.02 Extruded Aluminum Sign Panels With Direct Applied, Digitally Imaged, or Demountable Characters:

608-2.02 Extruded Aluminum Sign Panels With Demountable Characters: the third paragraph of the Standard Specifications is revised to read:

The letters, numerals, symbols, borders and other features of the sign message shall be direct applied, digitally imaged, or demountable, and shall conform to the requirements of Subsection 608-2.14, Demountable Characters, Subsection 608-2.15, Screen-Printed, Direct Applied, or Electronic Cut Characters, or Subsection 608-2.16, Digitally Imaged Characters.

608-2.07 Flat Sheet Aluminum Sign Panels With Direct-Applied or Silk-Screened Characters: the title and text of the Standard Specifications are revised to read:

608-2.07 Flat Sheet Aluminum Sign Panels With Direct-Applied, Digitally Imaged, Electronic Cut, or Screen-Printed Characters:

Panels shall be fabricated from 0.125-inch thick 5052-H36, or 5052-H38 Aluminum Alloy conforming to the requirements of ASTM B 209.

Panel facing shall be prepared and covered with retroreflective sheeting in accordance with the recommendations of the sheeting manufacturer. The color of the sheeting shall be as specified on the plans or as shown in the Manual of Approved Signs.

All surfaces not covered shall be etched to reduce glare from reflected sunlight.

The retroreflective sheeting shall conform to the requirements of Section 1007. Splicing of retroreflective sheeting shall not be allowed on sign panels having a minimum dimension up to and including four feet.

Messages shall be reflectorized white or, if called for on the plans, opaque black, and shall be produced by either screen printing, direct-applying, digital imaging, or electronic cutting, as specified under Subsections 608-2.15 and 608-2.16.

608-2.09 Warning, Marker, and Regulatory Sign Panels: of the Standard Specifications is revised to read:

Panels shall be fabricated from flat sheet aluminum and shall be reflectorized as specified herein.

Panels shall be fabricated in one piece from 0.125-inch thick 5052-H36, 5052-H38, or 6061-T6 Aluminum Alloy conforming to the requirements of ASTM B 209.

All surfaces of panels to be covered with retroreflective sheeting shall be prepared in accordance with the recommendations of the sheeting manufacturer. Surfaces not covered shall be etched to reduce glare from reflected sunlight. Retroreflective sheeting shall conform to the requirements of Section 1007.

Warning signs shall be reflectorized with fluorescent yellow retroreflective sheeting.

Regulatory signs shall be reflectorized with white retroreflective sheeting.

Reflectorized red signs shall be reflectorized with white retroreflective sheeting. The red color shall be produced by screen printing.

Regulatory signs with reflectorized red circles and slashes shall be reflectorized with white retroreflective sheeting. The red color shall be produced by screen printing.

Interstate route markers shall be cut to shape. The colors and legend shall be as shown on the plans and shall be reflectorized with white retroreflective sheeting. The Interstate route colors shall be screen printed. The numerals may be screen printed, electronic cut, or direct-applied characters.

United States, State Route, and Cardinal Direction markers shall be reflectorized with white retroreflective sheeting unless otherwise shown on the plans.

Splicing of retroreflective sheeting shall not be allowed on sign panels having the minimum dimension up to and including four feet.

608-2.11 Route Shields (For Installation on Sign Panels): of the Standard Specifications is revised to read:

Route shields may be may be demountable, direct applied, or digitally imaged.

Demountable route shields shall be cut to shape and shall consist of 0.063-inch thick, 5052-H36 or 5052-H38 Aluminum Alloy conforming to the requirements of ASTM B 209. The aluminum shall be degreased and etched in accordance with the recommendations of the sheeting manufacturer. Retroreflective sheeting shall be white and shall conform to the requirements of Section 1007. Route shields shall be attached to the sign panel with self-plugging aluminum blind rivets

608-2.12 EXIT ONLY (For Installation on Sign Panels): the title and text of the Standard Specifications are revised to read:

608-2.12 EXIT ONLY Panels (For Installation on Sign Panels):

EXIT ONLY panels may be may be demountable, direct applied, or digitally imaged. Demountable EXIT ONLY panels shall be attached to the sign panel with self-plugging aluminum blind rivets .

Demountable EXIT ONLY panels shall be fabricated from 0.063-inch thick, 5052-H36 or 5052-H38 Aluminum Alloy conforming to the requirements of ASTM B 209 with fluorescent yellow retroreflective sheeting adhered to the face side. The aluminum shall be degreased

and etched in accordance with the recommendations of the sheeting manufacturer. Retroreflective sheeting shall conform to the requirements of Section 1007.

608-2.13 Retroreflective Sheeting, Inks and Opaque Film: the second and third paragraphs of the Standard Specifications are hereby deleted.

608-2.14(A) General: the second paragraph of the Standard Specifications is revised to read:

Flat sheet aluminum substrates used for characters and borders shall be either aluminum alloy 3105-H14, 3003-H14, 5052-H36, or 5052-H38 as specified in ASTM B 209. Characters produced from the flat sheet aluminum alloy shall sit flat on the face of the sign panel without visible gap or deformation.

608-2.14(B) Sheeting and Colors: the third, fourth, and fifth paragraphs of the Standard Specifications are revised to read:

The color for demountable letters, numbers, symbols, and route shields on green, blue, and brown background signs shall be white, and shall conform to the requirements of Section 1007. Demountable legends on white and yellow background signs shall be black, and shall be opaque and non-reflective. Black characters shall be finished with laminated black opaque acrylic film.

When borders are used with demountable characters, white legend and border shall be used on green, blue, or brown sign backgrounds, and black legend and border shall be used on white or yellow sign backgrounds. Sign sheeting conforming to Section 1007 shall be used for white borders. Black borders shall be laminated black opaque acrylic film.

Laminated black opaque acrylic film to be used for characters or borders, as specified above, shall be applied in accordance with the coating manufacturer's recommendations. The contractor shall provide copies of any warranties provided by the manufacturer to the Engineer.

608-2.15 Silk-Screened or Direct Applied Characters: the title and text of the Standard Specifications is revised to read:

608-2.15 Screen-Printed, Direct Applied, and Electronic Cut Characters:

Screen-printed letters, numerals, arrows, symbols, and borders, shall be applied on the retroreflective sheeting background of the sign by direct or reverse screen process. Messages and borders of a color darker than the background shall be applied to the retroreflective sheeting by direct process. Messages and borders of a color lighter than the sign background shall be produced by the reverse screen process.

Opaque or transparent colors, inks, and paints used in the screen process shall be of the type and quality recommended by the manufacturer of the retroreflective sheeting.

The screening shall be performed in a manner that results in a uniform color and tone, with sharply defined edges of legends and borders and without blemishes on the sign background that will affect intended use.

Signs, after screening, shall be air dried or baked in accordance with the manufacturer's recommendations to provide a smooth hard finish. Any signs on which blisters appear during the drying process will be rejected.

Direct-applied letters, numerals, symbols, borders, and other features of the sign message shall be cut from black opaque or retroreflective sheeting of the color specified and applied to the retroreflective sheeting of the sign background in accordance with the instructions of the manufacturer of the retroreflective sheeting .

Direct-applied legend may be moved vertically 1/2 inch to avoid placing only a small amount of material over the adjacent extruded panel. The bottom of all characters for a line of legend shall line up within 1/8 of an inch.

Electronic cut characters shall be cut from retroreflective sheeting using computerized automated cutting processes.

608-2 Materials: of the Standard Specifications is modified to add:

608-2.16 Digitally Imaged Characters:

Digitally Imaged characters shall consist of characters produced through ultraviolet jet-printing or thermal transfer. Signs with digitally imaged characters shall be manufactured using matched component ink, transparent electronic-cuttable film, and/or overlay film as supplied by the reflective sheeting manufacturer. For digitally imaged copy on white sheeting, the coefficient of retroreflection shall be not less than 70 percent of the original values for the corresponding integral color. When characters are spread over two adjacent extruded panels, the characters shall align with each other within 1/16th of an inch.

608-3.02 Installation of Sign Panels: of the Standard Specifications is revised to read:

The sign panels shall be installed on overhead sign structures and roadside sign supports in accordance with the details shown on the plans and in accordance with the recommendations of the manufacturers of the sign panel components.

Minor scratches and abrasions resulting from fabrication, shipping and installation of panels may be patched; however, patching shall be limited to one patch per 50 square feet of sign area with the total patched area being less than five percent of the sign area. Panels requiring more patching than the specified limit will be rejected. Patches shall be edge sealed by a method approved by the retroreflective sheeting manufacturer.

Sign panels shall be attached to the posts with hex head bolts as shown in the Standard Drawings; slotted head bolts shall not be used. A cadmium-plated fender washer shall be placed between the bolt head and panel face.

For flat sheet panels, bolts shall be fastened with a cadmium-plated fender washer and two standard nuts. The fender washer shall be placed against the sign post, the first nut shall be tightened against the fender washer, and the second nut shall be tightened against the first nut. Bolts shall be tightened from the back by holding the bolt head stationary on the face of the panel. Twisting of the bolt head on the panel face will not be allowed.

The contractor shall provide two copies of a detailed list of all new signs installed on the project to the Engineer. The list shall include the sign identification code, the date each sign was installed (month and year), the fabricator of the sign, and the materials used to make the sign (manufacturer, type of sheeting, ink and film). The list shall be provided in a commonly used electronic spreadsheet format, such as EXCEL, and the two copies shall be submitted on CD-ROM disks . Signs shall be listed in numerical order by route, direction, and milepost and, where more than one sign is installed at the same general location, a letter subscript.

Sign panels within the same sign assembly shall be placed at the same orientation along the roadway so that the entire legend of the signs appear uniform under normal viewing conditions, both day and night.

Upon fabrication or installation of each sign, the contractor shall place information on the back of the sign showing the sign identification code, the sign fabricator, the manufacturer of the sheeting used, and the month and year of the installation. The formatting of the required information shall be as shown on the standard drawings . The information shall be positioned to be readily visible from a vantage point outside the flow of traffic and not obstructed by sign posts, extrusions, stringers or brackets. All letters shall be made of a long life material such as a black opaque acrylic film. Signs not marked as required will not be eligible for payment.

Temporary traffic control signs are exempt from the installation information requirement unless noted otherwise on the project plans.

608-3.04 **Inspection:** the second paragraph of the Standard Specifications is revised to read:

Each sign panel face shall be cleaned thoroughly just prior to the inspection by a method recommended by the manufacturer. The cleaning material shall in no way scratch, deface or have any adverse effect on the sign panel components.

608-5 **Basis of Payment:** first and second paragraphs of the Standard Specifications are revised to read:

The accepted quantities of each type of sign panel designated in the bidding schedule, measured as provided above, will be paid for at the contract unit price per square foot, complete in place, regardless of the type of sheeting or type of character used on the sign

panel. Payment shall be made on the total area of each type of sign panel to the nearest square foot.

No measurement or payment will be made for Route Shields and EXIT ONLY Panels (for installation on sign panels), the cost being considered as included in the contract unit price for the sign panel.

** USE ON ALL PROJECTS **

(1007REFS, 03/23/10)

SECTION 1007 - RETROREFLECTIVE SHEETING:

1007-1 General Requirements: the last two sentences of the first paragraph of the Standard Specifications are revised to read:

Sheeting shall conform to criteria listed in the most current version of ASTM D 4956 for the applicable type and class, unless otherwise specified.

1007-2 Material Types: of the Standard Specifications is revised to read:

Sheeting material types for warning signs, regulatory signs, and guide sign backgrounds shall be ASTM Type IX or XI sheeting.

In addition, all warning signs with yellow backgrounds shall use fluorescent retroreflective yellow sheeting.

For barricades, channelizers and other work zone devices, ASTM sheeting Types IV, VIII, IX, or XI shall be used.

ASTM sheeting Types IX or XI shall be used for route marker signs and auxiliaries (stand alone), and for milepost markers.

Sheeting for rigid orange work zone signs (fluorescent) shall be ASTM Types VIII, IX, or XI. Roll-up orange work zone signs shall use ASTM Type VI sheeting.

All work zone signs with orange backgrounds shall use fluorescent retroreflective orange sheeting, except that non-reflective sign materials may be used for temporary work zone signs where the signs will be clearly visible under available natural light.

For direct-applied characters, demountable characters and shields on guide signs, ASTM sheeting Types IX or XI shall be used.

ASTM sheeting Types IX or XI shall be used for object markers, guardrail markers, and delineators. Object markers for guardrail end treatments, and impact attenuators (fluorescent) shall use ASTM Types IX or XI.

Sheeting for Adopt-A-Highway signs and logo signs shall be ASTM Type I.

When more than one sheeting type is allowed, the contractor may use any of the types listed, provided that materials used for a particular application shall be of the same ASTM type, manufacturer, and product for all signs of the same type in the project.

Opaque films used with sheeting shall be acrylic type films.

Direct-applied and demountable black characters shall be non-reflective.

1007-3 Visual Appearance, Luminance and Color Requirements: of the Standard Specifications is revised to read:

Except as specified herein, the color of the sheeting, ink or film shall conform to the ADOT Manual of Approved Signs, the Manual on Uniform Traffic Control Devices (MUTCD), and the plans.

All sheeting, inks and film used shall be uniformly colored so there is no visual variation in their appearance on the same sign or from sign to sign of the same colors.

Standard colors specified for sheeting, processing inks, and films shall, as applicable, match visually and be within the color tolerance limits required by Highway Tolerance Charts issued by the Federal Highway Administration. Additionally, for the retroreflective sheeting, unless otherwise noted, the Luminance Factor (Daytime Luminance) and Color Specification Limits (Daytime) shall conform to the applicable requirements of ASTM D 4956.

In addition to the luminance and color requirements, fluorescent orange sheeting and fluorescent yellow sheeting shall have the capacity to effectively fluoresce outdoors under low light conditions. For all applications requiring fluorescent orange sheeting or fluorescent yellow sheeting, the contractor shall provide a letter to the Engineer from the manufacturer certifying that the sheeting to be used is fluorescent.

1007-6 Adhesive: the first paragraph of the Standard Specifications is revised to read:

Reflective sheeting and film adhesives shall be Class I as specified in ASTM D 4956 and as modified herein.

1007-6 Adhesive: the third paragraph of the Standard Specifications is hereby deleted:

1007-8 Durability Requirements: the second and third paragraphs of the Standard Specifications are revised to read:

Type IX and XI sheeting shall be weather-tested, as specified above, for a period of 60 months. Fluorescent orange colored sheeting used for construction zone signing, barricades, and channeling devices shall be weather-tested for a period of 18 months. All other sheeting shall be weather-tested for a period of 30 months. In all cases the related inks and films shall be tested along with the respective sheeting, and shall be subject to the same durability requirements as the sheeting.

Type IX and XI sheeting, related inks and films shall have a minimum ten year durability rating. All fluorescent orange sign sheeting shall have a minimum durability rating of three

years. All other sheeting, films, and inks shall have a minimum durability rating of five years.

332 PLACE NAMES

Place name signs may be installed on State highway right-of-way provided that one of the following criteria is met:

A. The town or city is incorporated by the State of Arizona.

B. The unincorporated town is a community which is on the official State highway map, has a system of streets, and a U.S. Post Office.

C. The unincorporated community is of historical importance and continues to provide an impact in such fields as architecture, history, archeology, and culture and is listed in the Arizona State Historical Register.

The town limit or city limit (I10-5) sign shall be located at the political boundary line. The local agency may install a unique town or city limit sign at their own expense, as long as it conforms to the requirements of the Manual on Uniform Traffic Control Devices. **The local agency signs shall be installed by permit or as an approved item of a maintenance agreement.**

When an urban district extends beyond the limits of the town or city by a quarter mile or more, the entering community (I10-2) sign may be installed in addition to the town or city limit sign except on freeways.

Subdivisions, village cores, and other areas that are located within a city, town, or unincorporated community are not eligible for place name signing.

Monuments for cities and towns shall not be installed on any State highway right-of-way.

336 SUPPLEMENTAL AND MISCELLANEOUS GUIDE SIGNING REQUESTS

Supplemental and miscellaneous guide signs may be considered for public facilities which generate a significant volume of traffic that is unfamiliar with the local area. Only non-profit facilities are eligible for supplemental and miscellaneous guide signing unless specifically included in this policy.

Supplemental and miscellaneous guide signs can reduce the effectiveness of other more important guide signs by overloading the driver's capacity to receive and make decisions on visual messages. For this reason criteria have been developed for consideration of supplemental and miscellaneous signing. However, satisfying the criteria does not assure that supplemental or miscellaneous guide signs will be approved and installed.

Only one supplemental guide sign may be used at each interchange or intersection approach. If a supplemental guide sign is used, it may display one or two destinations followed by the interchange number or if the interchange is not numbered, by the legend NEXT RIGHT or SECOND RIGHT, as appropriate. **Where two or more facilities are affiliated with the same agency, i.e., a football stadium within a university, only one destination will be signed.** Supplemental guide signs will not normally be provided in advance of freeway to freeway interchanges. Where a destination is reachable from more than one traffic interchange or turnoff along a state highway, only the most simple, direct, and convenient route to the destination will be considered for signing.

Miscellaneous guide signs identifying geographical features such as rivers, summits, and political boundaries may be approved if they do not detract from signing for interchanges or other critical decision points. Miscellaneous guide signs shall be consistent with other guide signs in design and legibility.

Signs for recreational and cultural interest facilities/areas shall be rectangular in shape and normally have a white legend and border on a brown background. However, when a recreational or cultural interest destination is shown on the same sign with a non-recreational destination, the sign shall have a green background.

When the destination is not located on the intersecting crossroad of the traveled highway, signing shall not be installed until the local agency has installed appropriate trailblazer signing for the logical direction of traffic to the facility.

The following types of facilities shall be excluded from guide signing:

- **churches**
- **libraries**
- **clubs**
- **elementary and high schools**
- **shopping centers and malls**

- **private businesses**
- **subdivisions**
- **city parks**
- **public buildings**
- **post offices**
- **court houses**
- **privately-owned museums**
- **privately-owned cemeteries**
- **gaming casinos**
- **other places of local nature**

In addition to the foregoing general requirements, specific criteria for the approval and installation of the various types of supplemental and miscellaneous guide signs are as follows:

336.1 SIGNING FOR AIRPORTS

An airport may be considered for signing when the facility is located within the following distance from the highway turnoff or exit ramp terminal:

Major Metro Area*	Urban Area**	Rural Area
5 miles	**8 miles**	**10 miles**

*Urban area with 50,000 or more population.
**Urban area with 5,000 - 49,000 population.

The following criteria must also be met:

1. On conventional roadways, signing may be considered provided one of the following conditions is met:

   a. The airport has regularly scheduled commercial air travel and mail pickup, or

   b. The airport is owned and operated by a political subdivision.

2. On freeways, signing may be considered when a car rental or taxi service is available at all times the airport is open (a measure of the number of persons using the facilities) and one of the following conditions met:

   a. The airport has regularly scheduled commercial air travel and mail pickup, or

   b. The airport is publicly owned and has an operating FAA tower (a measure of air activity).

Dependent on the type of airplane common to each airport, two airplane symbol sign designs are available: a jet (I-5) and a propeller plane (I5Z).

336.2 SIGNING FOR MILITARY INSTALLATIONS

For a military installation to be considered for signing, the facility must meet one or more of the following:

1. Be the principle traffic generator for the traffic interchange or intersection, or

2. Have 3,000 or more military and civilian personnel, and

    a. In urban areas, be within 5 miles of the highway turnoff or exit ramp terminal. The distance may be increased 1 mile for each 1,000 additional personnel.

    b. In rural areas, be within 10 miles of the highway turnoff or exit ramp terminal. The distance may be increased 2 miles for each 1,000 additional personnel.

336.3 SIGNING FOR MILITARY CEMETERIES AND MEMORIALS

For a military cemeteries and military memorials to be considered for signing, the site must meet one or more of the following:

1. A cemetery is to be recognized formally as a military cemetery.

2. A memorial has to:
    a. Be recognized formally as a military memorial.
    b. Have 4 or more individuals memorialized.

In addition, the site has to be within 5 miles of the highway turnoff or exit ramp terminal in urban areas, and within 10 miles of the highway turnoff or exit ramp terminal in rural areas.

336.4 SIGNING FOR RECREATIONAL AND CULTURAL INTEREST FACILITIES/AREAS

1. Guide signing may be considered for the following recreational/cultural interest facilities/areas:

    a. National parks, such as Petrified Forest.

    b. National forest boundaries and significant forest attractions such as camping areas and trailheads.

c. National recreation areas, such as Lake Mead.

d. National monuments, such as Walnut Canyon.

e. National historic sites, such as Hubbell Trading Post.

f. National landmarks, such as Lowell Observatory.

g. State parks, such as Picacho Peak.

h. Publicly-owned museums of regional significance.

i. Historic or pioneer cemeteries as confirmed by the State Historic Society.

j. Civic centers.

2. In addition to those facilities/areas described in the preceding section, recreational and cultural interest facility/area signing may be considered when a facility/area is a significant destination from a numbered highway and the recreational or cultural interest facility/area is included in the guideline on Distance Signing and Control Cities (see Section 331).

   When warranted, signs should be located at the first point at which an access road intersects the highway.

3. Recreational and cultural interest facility/area signing may be included at the junction of two or more numbered routes or at a freeway interchange only where direct access to the facility/area is located on one of the intersecting routes.

4. Special applications of recreational facility/area signing are as follows:

   a. Lakes, rivers, dams, mountains, valleys, summits and other geographical areas may be considered for signing when it is necessary to identify the area, there are no other reasonable destinations, and the geographical area cannot be identified with the crossroad name.

   b. County parks may be considered for signing if they contain camping or recreational facilities of more than local interest, such as Colossal Cave and Tucson Mountain Park.

   c. State and county fairgrounds may be considered for signing. Signing may be permanent or temporary, depending upon the usage of the facility. The sign legend will indicate “NAME/ COUNTY/ FAIRGROUNDS”. County may be abbreviated “CO.”, due to limited sign size.

d. Recreation areas for snow skiing may be considered for signing if the following criteria are met:

(1) The ski area is located within 8 miles of the highway exit/turn-off designated by the signing, and

(2) Necessary trailblazer signing off the highway is installed by the agency having jurisdiction over the local road to the ski area, and

(3) Ski area signs will not detract from other traffic control devices.

The legend on the advance guide sign shall be NAME (i.e., SNOW BOWL)/SKI AREA/ _____MILES or NAME/SKI AREA/NEXT RIGHT. The legend on the sign at the turn shall be NAME/SKI AREA/ with an arrow in combination and may include the appropriate mileage if the entrance is not located adjacent to the highway. The name of the operating agency, community, group, or enterprise shall not appear in the legend on any sign.

e. Wildlife viewing areas may be signed if they are identified in the *Arizona Wildlife Viewing Guide* and are located on or are reachable from a Type 1 Road as identified in Section 2H-2 Application of Recreational and Cultural Interest Area Signs of the Manual on Uniform Traffic Control Devices (MUTCD) and meet the following criteria:

The wildlife viewing area is located:

(1) In a turnout immediately adjacent to the highway, or

(2) On or reachable from a trailhead or reachable from a local access road both of which are traversable under normal weather conditions by conventional powered passenger vehicles including automobiles, pickups, camping trailers, and other common types of recreational vehicles, and

(3) The wildlife viewing area or trailhead to the wildlife viewing area is located within 1 mile of the highway turnoff.

The Wildlife Viewing Area sign, symbolized by a pair of binoculars, and the Wildlife Viewing Area educational plaque are herein added to the General Information Section in the Symbol Usage column of Table II-6 Category and Usage Chart of MUTCD Section H, Recreational and Cultural Interest Area Signs, for application on both Road Type 1 and 2. The signs are intended for use in accordance with the

provisions of MUTCD Section H except that they are not normally intended for use on freeways or expressways.

Where the wildlife viewing area is the only identified destination along a local access road or attraction at a highway turnout, two signs shall be used for each approach to the intersection or turnout: one at the intersection or turnout and one from 1/4 to 1/2 mile in advance of the intersection or turnout. The sign at the intersection or turnout shall utilize a horizontal arrow indicating the proper direction to the wildlife viewing area. The advance sign shall utilize a distance plate. Both the arrow and the distance plate shall be located below the Wildlife Viewing Area sign.

Where the local access road or highway turnout has existing destination signs in place, the Wildlife Viewing Area signs may be installed:

(1) At one location as an independent Supplemental Guide Sign or, where appropriate,

(2) At the locations of and underneath the existing destination signs or incorporated into the display of other existing recreational symbol signs.

Where trailblazer signs are needed along a local access road to provide confirming directions to the wildlife viewing area, the trailblazer signs shall be provided by the agency having jurisdiction over the local access road. If the agency does not agree to provide, install, and maintain needed trailblazer signs, Wildlife Viewing Area signs shall not be installed on the highway.

5. Where a recreational facility/area is open 24 hours per day, 7 days per week, both the legend and background of the recreation sign shall be reflectorized. If the recreation facility/area is only open during daylight hours, the following guidelines for recreation signs shall govern:

a. Both the legend and the background should be reflectorized if that is the only sign for a particular traffic interchange or intersection.

b. If a recreation sign is a supplemental guide sign and there are green guide signs displayed for other destinations, the legend and background of the recreation sign should be non-reflectorized.

c. When a recreation facility/area is not open 24 hours a day, the hours of operation should be displayed on the sign located at the turn-off, or at the freeway exit ramp terminal. Where a recreational facility/area is seasonal in operation, the signing shall be removed or covered during the off-season.

6. Where appropriate, recreational facility/area signing may be supplemented with motorist services signing. Such services signing should not be installed, however, except when justified on the basis of an engineering and traffic investigation. Motorist services signing for recreational facilities/areas shall be consistent with Section 353.

   Where motorist services signing is provided for a recreational facility/area and where the facility/area is under a jurisdiction other than the State, the costs for such services signing shall be borne by the requesting agency and ADOT.

336.5 SIGNING FOR SPORTS FACILITIES

Sports facilities shall not normally be signed unless temporary signs are needed to enhance traffic operations. The placement of temporary signs should be made in cooperation with the proper enforcement agency which should cover or remove the signs when they are not needed.

Permanent signing may be considered for sports facilities when the facility is used throughout the year and the annual attendance equals or exceeds the following values:

Major Metro Area*	Urban Area**	Rural Area
300,000	250,000	200,000

* Urban area with 50,000 or more population.
** Urban area with 5,000-49,999 population.

336.6 SIGNING FOR COLLEGES AND UNIVERSITIES

Signing for colleges and universities shall be in accordance with Administrative Rule R17-3-901, Signing for Colleges and Universities.

336.7 MISCELLANEOUS GUIDE SIGNS

Roadways such as the Apache Trail, Coronado Trail, and Pinal Pioneer Parkway may be signed.

Arizona State governmental facilities which serve the general public and Federal governmental facilities, such as Veterans Administration hospitals and Federal prisons, may be signed.

Indian Reservation boundaries and political boundaries may be signed. Regional area boundaries significant to State tourism and approved by the State Legislature also may be signed.

380 SIGN MATERIALS

The table below lists the sheeting alternatives that are acceptable for each category of signing.

The type of sheeting to be used in any given application will be called out on the project plans. Use of sign sheeting other than that specified in this section shall require approval by the State Traffic Engineer.

SIGN TYPE OR APPLICATION	TYPE OF SHEETING				
	IV	VIII	VI	IX	XI
Warning Signs				X	X
Regulatory Signs (White)				X	X
Regulatory Signs (Red)				X	X
Guide Sign-Backgrounds				X	X
Direct Applied Characters and Shields on Guide Signs				X	X
Demountable Characters and Shields on Guide Signs				X	X
Route Marker Signs and Auxiliaries (stand-alone)				X	X
Orange Work Zone Signs*		X		X	X
Orange Work Zone Signs (Roll-up)**			X		
Barricades, Channelizers and other Work Zone devices	X	X		X	X
Milepost Markers				X	X
Object Markers, Guard Rail Markers, and Delineators				X	X
Object Markers for Guard Rail End Treatments, and Impact Attenuators				X	X

* Orange Warning Work Zone signs shall use prismatic fluorescent orange sheeting per the ADOT Approved Products List (**http://azdot.gov/TPD/ATRC/pride/index.asp**)

** Non-reflective sign materials may be used for strictly daytime applications such as maintenance and survey work where the signs may be clearly visible under available natural light.

The designations and requirements for sheeting shall conform to the most current version of the American Society of Testing Materials (ASTM) D4956 Standard Specification for Retroreflective Sheeting for Traffic Control, unless otherwise noted. Materials used for a particular application shall be of the same ASTM type, manufacturer, and product for all signs of the same type in the project.

Warning signs strictly used in daytime applications such as maintenance and survey work where the signs may be clearly visible under available natural light may use non-retroreflective sign materials.

All yellow sheeting shall be fluorescent yellow. Orange warning signs shall use fluorescent orange sheeting.

The Type VI shall be a flexible prismatic lens element material with a Class 5 backing that is specifically designed for roll-up signs.

Designers, construction and maintenance personnel need to become familiar with the Approved Products List (APL) which is maintained by the Arizona Transportation Research Center through the PRIDE program and available through that office, or on the ADOT intranet and internet at http://azdot.gov/TPD/ATRC/pride/index.asp , because not all colors or types of sheeting products have been approved for use. For instance, some inks used in printing of certain types of regulatory and guide signs have not performed satisfactorily in testing and therefore any signs using those inks are unacceptable.

Details on direct applied and demountable copy, as well as other aspects of signs and sign sheeting may be found in Sections 608 and 1007 of the Standard Specifications. All potential users need to become familiar with these parts of the Standard Specifications and any revisions that may be issued in Stored Specification or Special Provision format.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	5/03
2	TYPO ERRORS CORRECTED	L. LOPEZ	7/03
3	SLIP BASE REQUIREMENTS (TABLE) REVISION	L. LOPEZ	8/04
4			

TABLE 2S - SINGLE POST

2" (2S) SINGLE POST 12 GAUGE,
POST REQUIRED,
SIGN AREA IN SQUARE FT.

PANEL CENTROID HEIGHT H+(D/2)	5	10	15	20
6	1	1	2	2
7	1	1	2	2
8	1	2	2	
9	1	2	2	
10	1	2		
11	1	2		
12	2			

TABLE 2½T - TELESCOPING POST

2¼" & 2½" (2½T) TELESCOPING POST 12 GAUGE,
POSTS REQUIRED,
SIGN AREA IN SQUARE FT.

PANEL CENTROID HEIGHT H+(D/2)	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110
6	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3
7	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3			
8	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3						
9	1	1	1	1	2	2	2	2	2	3	3	3	3	3								
10	1	1	1	1	2	2	2	2	3	3	3	3	3									
11	1	1	1	2	2	2	2	3	3	3	3											
12	1	1	1	2	2	2	3	3	3													

ALL TELESCOPING POSTS SHALL BE
INSTALLED ON SLIP BASE.

TABLE 2½S - SINGLE POST

2½" (2½S) SINGLE POST 12 GAUGE,
POST REQUIRED,
SIGN AREA IN SQUARE FT.

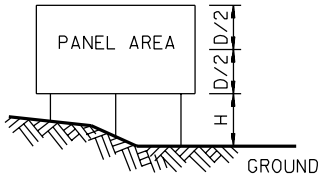
PANEL CENTROID HEIGHT H+(D/2)	5	10	15	20	25	30	35	40	45	50	55	60	65
6	1	1	1	1	2	2	2	2	3	3	3	3	3
7	1	1	1	2	2	2	2	3	3	3	3		
8	1	1	1	2	2	2	3	3	3				
9	1	1	2	2	2	3	3	3					
10	1	1	2	2	3	3	3						
11	1	1	2	2	3	3							
12	1	2	2	3	3								

SLIP BASE REQUIRMENTS

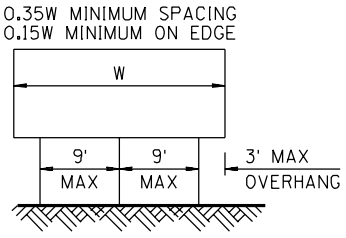
	2S	2½S	2½T
1 POST	NO	NO	SLIP BASE
2 POST	NO	SLIP BASE	SLIP BASE
3 POST	DO NOT USE 3 POST	SLIP BASE	SLIP BASE

NOTES:

1. SIGNS GREATER THAN 42 INCHES IN WIDTH SHALL BE MOUNTED ON TWO OR MORE POSTS. WARNING AND YIELD SIGNS ARE EXPECTED ON NON-FREEWAYS, RAMPS AND CROSS-ROADS. SEE STD DRAWING S-3, SHEET 3 OF 4.
2. SLIP BASES SHOULD NOT BE USED IN LOCATIONS PROTECTED BY GUARDRAIL, BARRIER, OR OUTSIDE THE CLEAR ZONE, (30 FT. FROM EDGE LINE).



CENTROID HEIGHT = H+(D/2)
ALWAYS USE LARGEST H



SHEET 1 OF 3
NOT TO SCALE

DESIGN APPROVED
SIGNATURE ON FILE
APPROVED FOR DISTRIBUTION

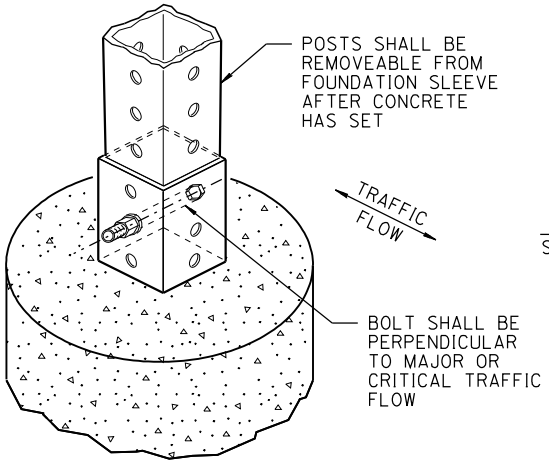
ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
STANDARD DRAWINGS

REV. 8/04

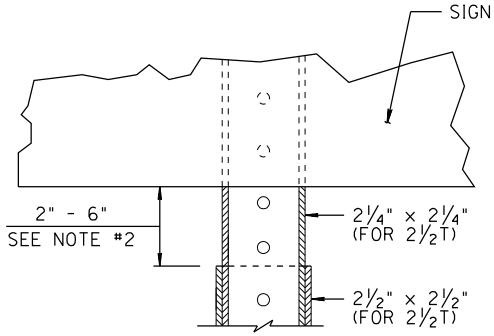
SQUARE TUBE SIGN POST
SELECTION CHARTS

DRAWING NO. S-1

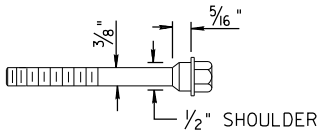
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-DESIGN	M. ZUBI	5/03
2	NOTE #2 SPELLING CORRECTION	L. LOPEZ	5/06
3			
4			



DETAIL "A"



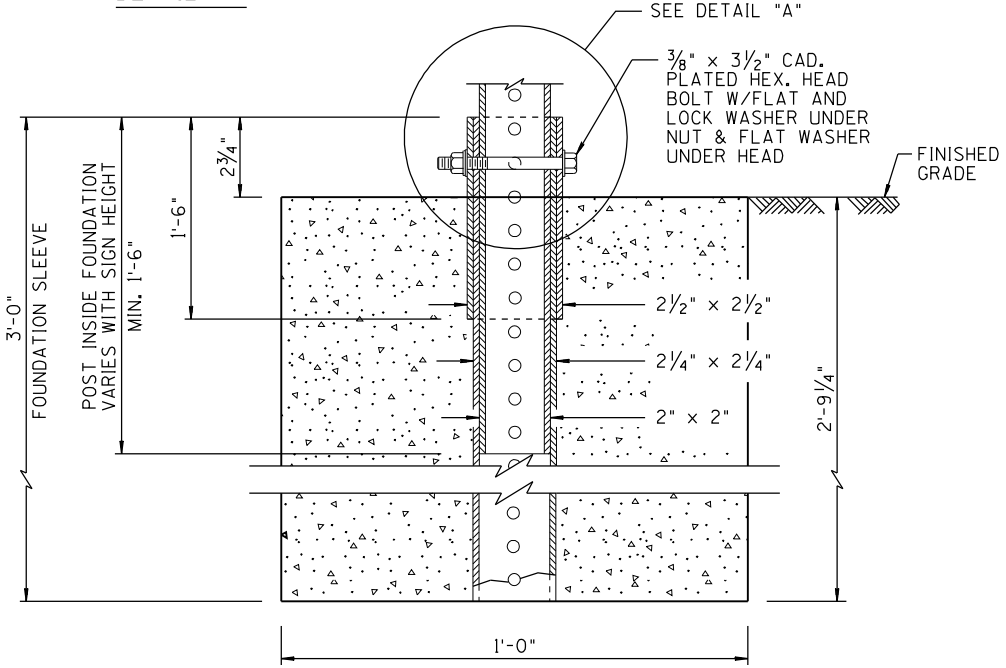
TELESCOPING POST INSTALLATION



SHOULDER BOLT

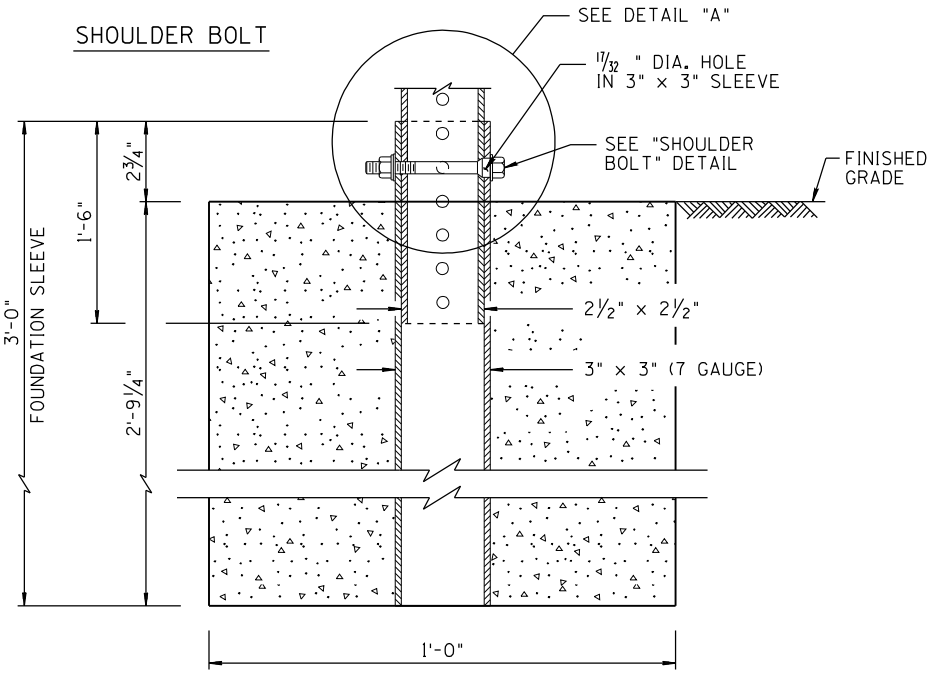
NOTES:

1. FOR ESTIMATING PURPOSES; CONCRETE QUANTITY PER POST IS 0.09 CUBIC YARDS FOR 1 FOOT DIAMETER FOUNDATIONS.
2. ON TELESCOPING INSTALLATIONS UNDER 5000 FT. ELEVATION, THE OUTER SLEEVE SHALL BE BETWEEN 2 INCHES AND 6 INCHES BELOW THE BOTTOM OF THE SIGN PANEL. FOR INSTALLATION ABOVE 5000 FT., THE SLEEVE SHALL EXTEND TO THE TOP OF THE PANEL.



2" SINGLE POST CONCRETE FOUNDATION DETAIL

IN WEAK SOILS



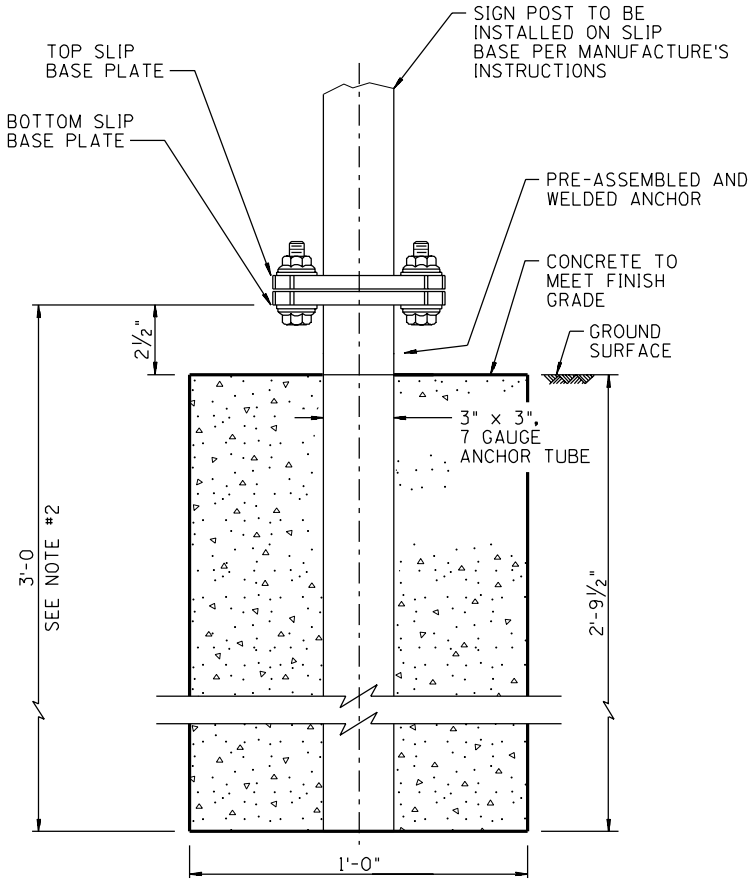
2½" SINGLE POST CONCRETE FOUNDATION DETAIL

IN WEAK SOILS

SHEET 2 OF 3
NOT TO SCALE

DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 5/06
APPROVED FOR DISTRIBUTION	PERFORATED SIGN POST FOUNDATION	DRAWING NO. S-1

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	RE-DRAWN	M.Z. / L.L.	9/02
3	RE-DRAWN	M.Z. / L.L.	5/03
4			

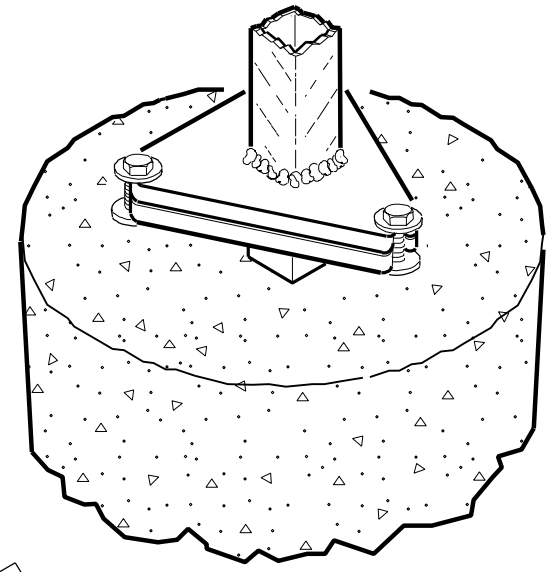


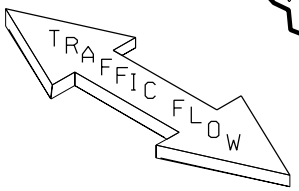
FOUNDATION DETAILS

PRE-ASSEMBLED SLIP BASE UNIT. EXACT CONFIGURATION VARIES. CONTACT MANUFACTURER ON ADOT APPROVED PRODUCT LIST FOR INFORMATION AND REQUIREMENTS.

NOTES:

1. ALL SLIP BASES SHALL BE PRE-ASSEMBLED BY THE MANUFACTURER. THE SLIP BASE SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
2. ANCHOR TUBE AND BOTTOM SLIP BASE SHALL BE WELDED TOGETHER INTO A ONE-PIECE ASSEMBLY INSTALLED IN THE FOUNDATION.

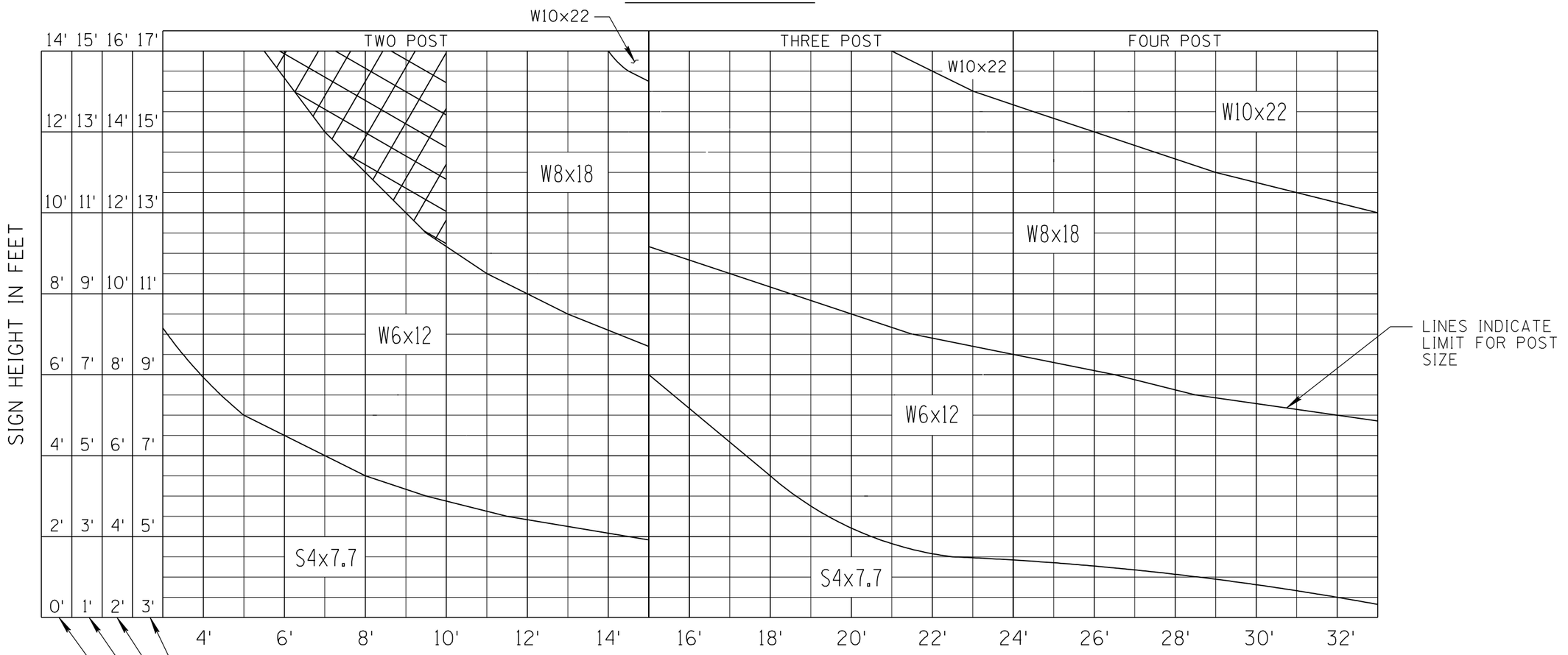




SHEET 3 OF 3
NOT TO SCALE

DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 5/03
APPROVED FOR DISTRIBUTION	PERFORATED SIGN POST FOUNDATION	DRAWING NO. S-1

S&W SHAPE POST SELECTION CHART



DESIGN WIND SPEED = 90 MPH

LEGEND:

SIGNS WHICH FALL IN THIS AREA SHOULD BE RE-DESIGNED FOR A MINIMUM 10 FT. WIDTH.

NOTES:

*1. "X" EQUALS THE AVERAGE HEIGHT FROM THE GROUND LINE TO THE BOTTOM EDGE OF THE SIGN.

2. S4x7.7 POSTS SHALL BE USED ONLY ON FREEWAYS FOR EXIT GORE SIGNS AND SMALLER EXTRUDED PANELS.

3. ONLY EXTRUDED PANELS SHOULD BE USED ON NEW S&W POSTS. FLAT SHEET PANELS MAY BE MOUNTED TO EXISTING BREAKAWAY POSTS IF CALLED FOR ON THE PLANS.

4. THE SIGN PANEL RATIOS OF HEIGHT/WIDTH AND WIDTH/HEIGHT SHALL NOT EXCEED 15.

5. THIS CHART IS NOT APPLICABLE FOR SPECIAL WIND REGIONS. SEE THE, "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", AND SHEET 2 OF 2 OF THIS STANDARD DRAWING FOR THE SPECIAL WIND REGION CHART.

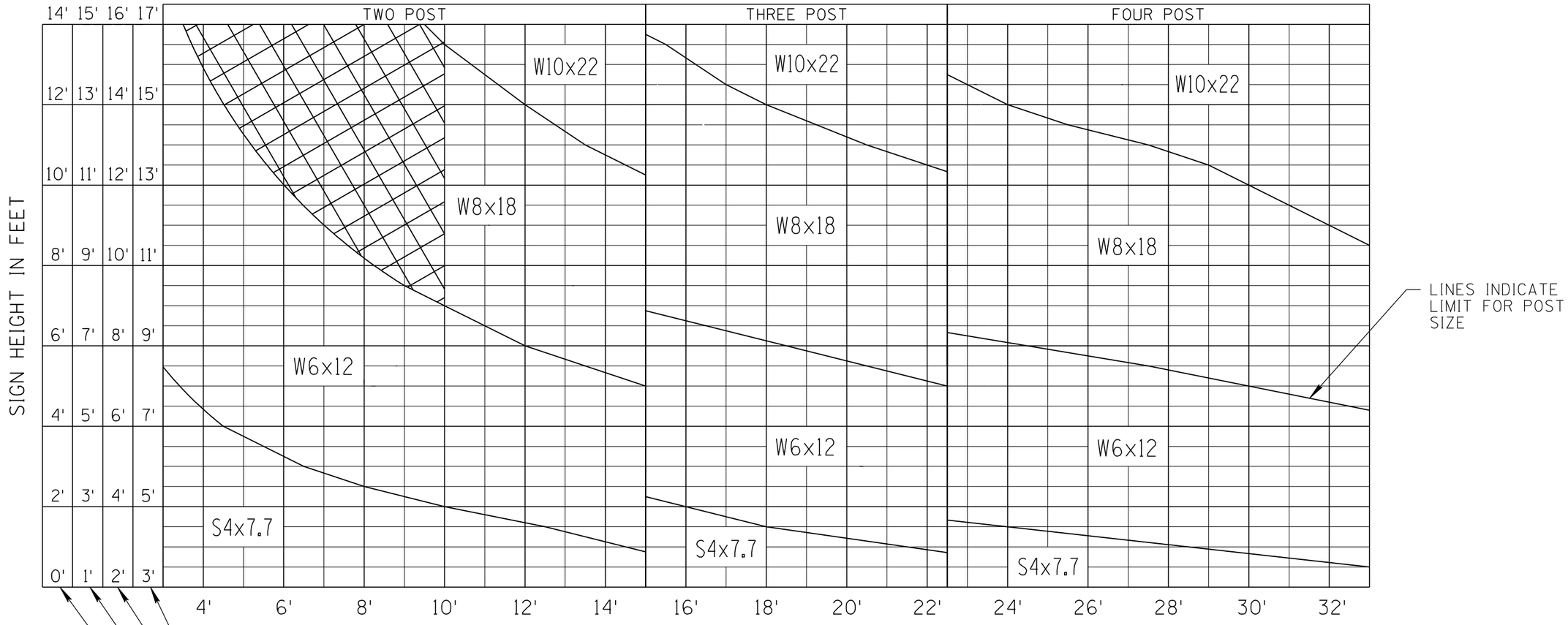
6. ALL POSTS SHALL BE ASTM GRADE 50 KSI MATERIAL.

NOT TO SCALE

DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 10/10
APPROVED FOR DISTRIBUTION **ON FILE**	S&W SHAPE POST SELECTION CHART (BREAKAWAY SIGN POST DESIGN)	DRAWING NO. S-2 SHEET NO. 1 OF 2

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	REVISED AND ADDED SHEET 2 OF 2. ADDED NEW BORDER.	PARSONS BRINCKERHOFF	10/10

S&W SHAPE POST SELECTION CHART



SIGN WIDTH IN FEET

DESIGN WIND SPEED = 90 MPH
(ARIZONA SPECIAL WIND REGIONS)

LEGEND:

SIGNS WHICH FALL IN THIS AREA SHOULD BE RE-DESIGNED FOR A MINIMUM 10 FT. WIDTH.

NOTES:

*1. "X" EQUALS THE AVERAGE HEIGHT FROM THE GROUND LINE TO THE BOTTOM EDGE OF SIGN.

2. S4x7.7 POSTS SHALL BE USED ONLY ON FREEWAYS, FOR EXIT GORE SIGNS AND SMALLER EXTRUDED PANELS.

3. ONLY EXTRUDED PANELS SHOULD BE USED ON NEW S&W POSTS. FLAT SHEET PANELS MAY BE MOUNTED TO EXISTING BREAKAWAY POSTS IF CALLED FOR ON THE PLANS.

4. THE SIGN PANEL RATIOS OF HEIGHT/WIDTH AND WIDTH/HEIGHT SHALL NOT EXCEED 15.

5. THIS CHART IS NOT APPLICABLE FOR SPECIAL WIND REGIONS. SEE THE, "AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS", AND SHEET 2 OF 2 OF THIS STANDARD DRAWING FOR THE SPECIAL WIND REGION CHART.

6. ALL POSTS SHALL BE ASTM GRADE 50 KSI MATERIAL.

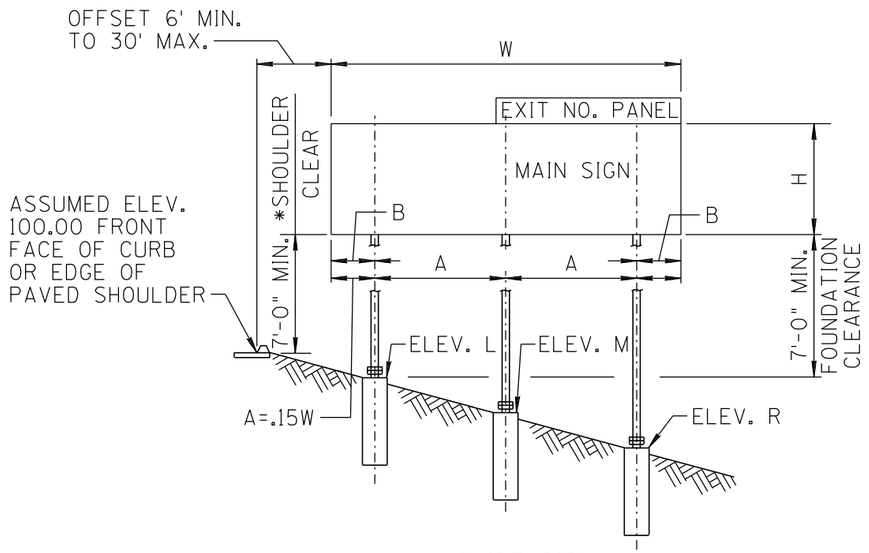
NOT TO SCALE

DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 10/10
APPROVED FOR DISTRIBUTION **ON FILE**	S&W SHAPE POST SELECTION CHART (SPECIAL WIND REGIONS) (BREAKAWAY SIGN POST DESIGN)	DRAWING NO. S-2 SHEET NO. 2 OF 2

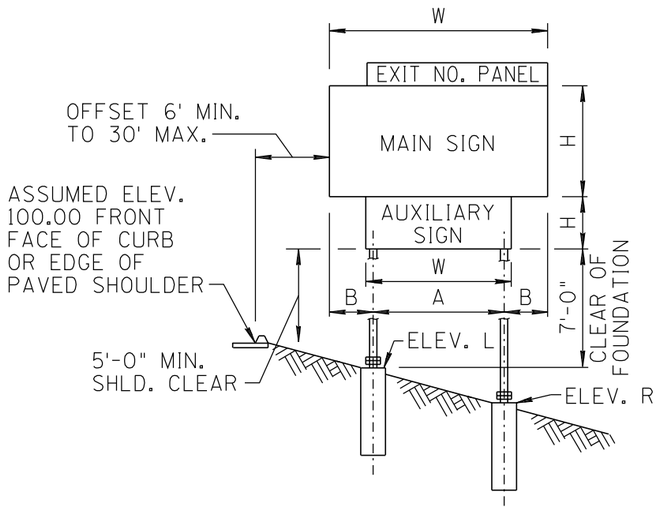
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	REVISED AND ADDED SHEET 2 OF 2. ADDED NEW BORDER	PARSONS BRINCKERHOFF	10/10
2			
3			
4			

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	REVISED SIGN DIMENSIONS, ADDED POST TABLE, ADDED NEW BORDER.	L. LOPEZ	10/10

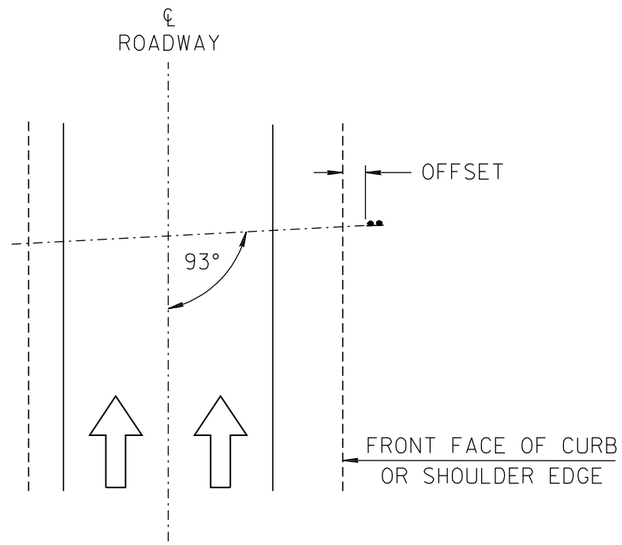
* WHEN SIGN IS 30' OR MORE FROM EDGE OF PAVED SHOULDER, THE 7'-0" SHOULDER CLEAR MAY BE REDUCED TO 5'-0" MIN.



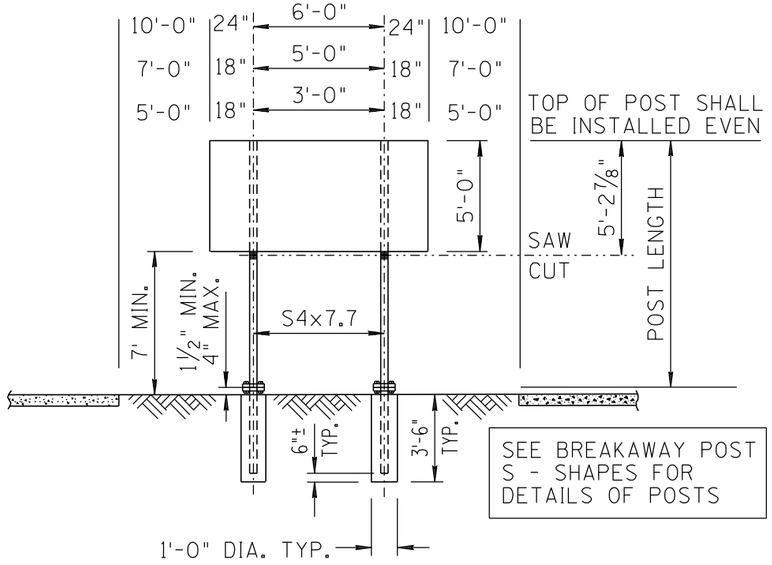
GUIDE SIGN
INSTALLED ON SHOULDER



GUIDE SIGN WITH AUXILIARY SIGN
INSTALLED ON SHOULDER

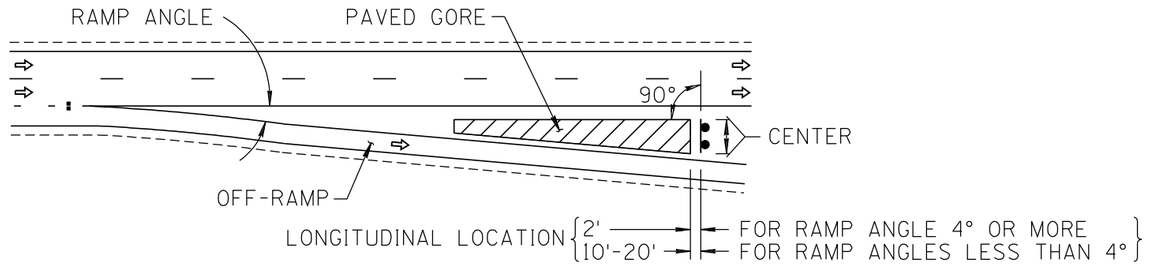


TYPICAL SIGN INSTALLATION
ON SHOULDER



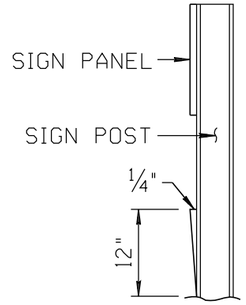
SEE BREAKAWAY POST
S - SHAPES FOR
DETAILS OF POSTS

TYPICAL EXIT GORE SIGN



EXIT GORE SIGN LOCATION

THE LOCATION MAY BE SHIFTED BY THE ENGINEER TO SECURE A MORE DESIRABLE LOCATION.

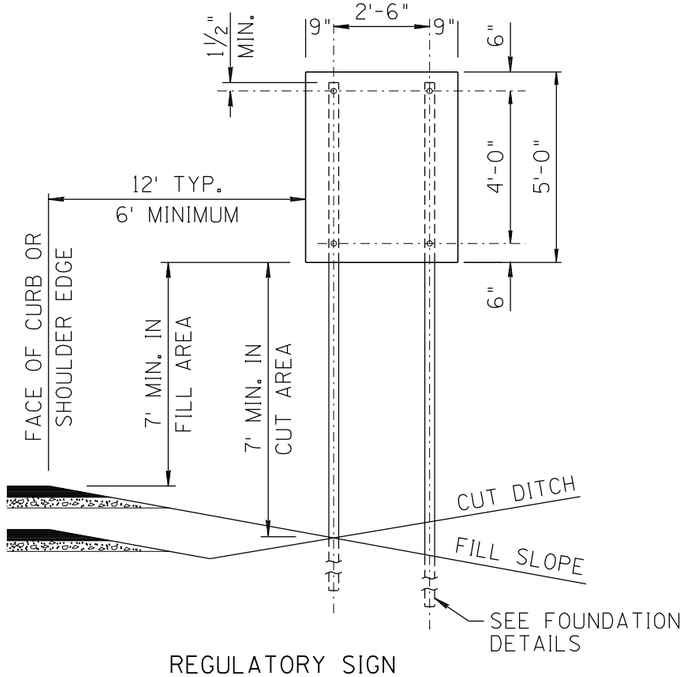


FOR GORE
INSTALLATIONS ONLY

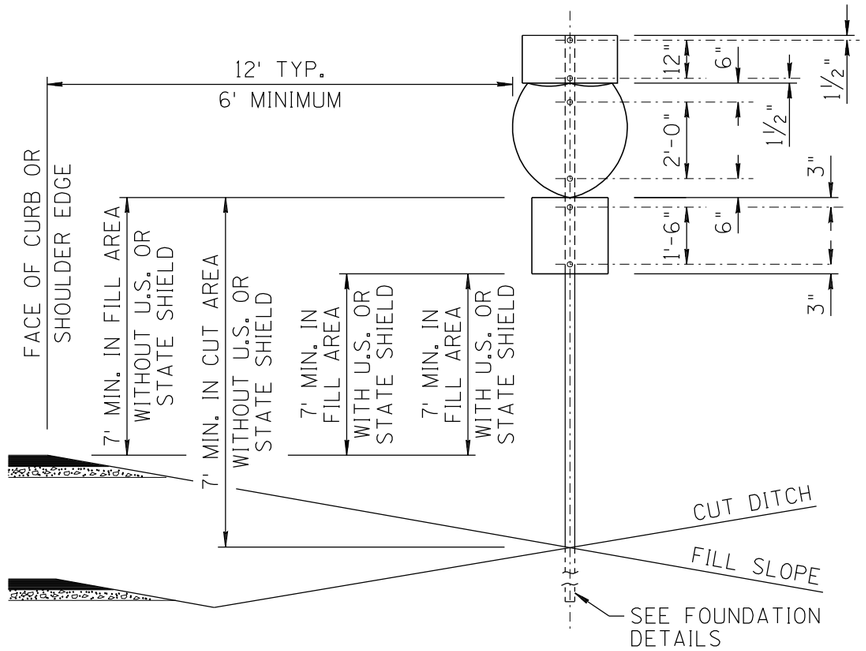
POST TYPE	TWO POST A	TWO POST B	THREE POST A	THREE POST B	FOUR POST A	FOUR POST B
S4x7.7 W6x12	60% W 9'-0" MAX.	20% W 1'-0" MIN. 3'-0" MAX.	35% W 9'-0" MAX.	15% W 3'-0" MAX.	25% W 9'-0" MAX.	12.5% W 3'-0" MAX.
W8x18 W10x22	7'-6" MIN. 9'-0" MAX.	1'-0" MIN. 3'-0" MAX.	7'-6" MIN. 9'-0" MAX.	1'-0" MIN. 3'-0" MAX.	7'-6" MIN. 9'-0" MAX.	1'-0" MIN. 3'-0" MAX.

NOT TO SCALE

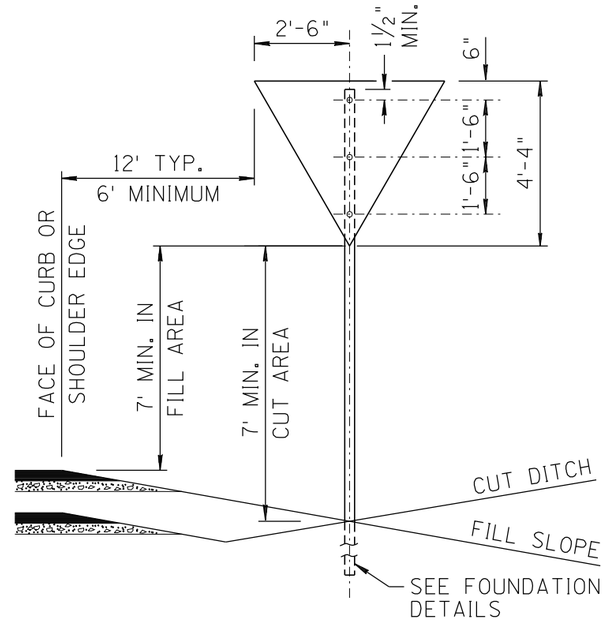
DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 10/10
APPROVED FOR DISTRIBUTION **ON FILE**	OFFSETS, CLEARANCES AND MOUNTING DETAILS FOR GUIDE SIGNS AND BREAKAWAY POST INSTALLATION	DRAWING NO. S-3 SHEET NO. 1 OF 4



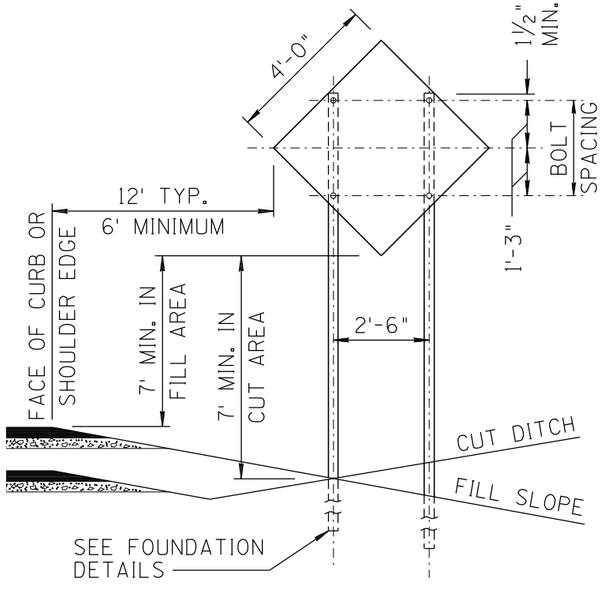
REGULATORY SIGN



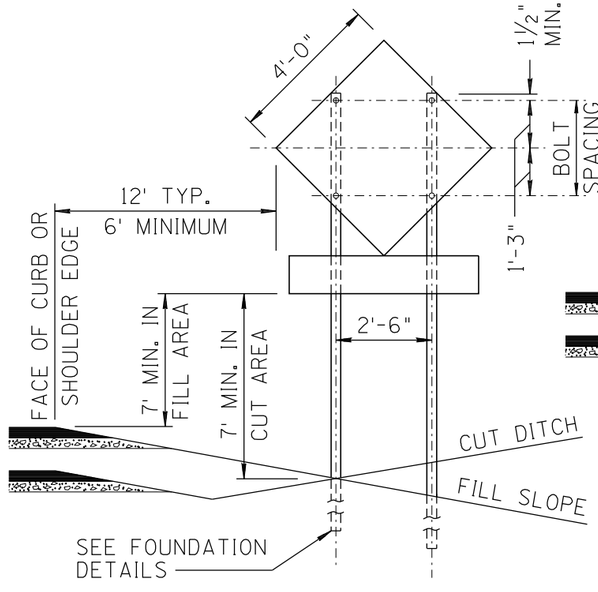
ROUTE MARKER ASSEMBLY



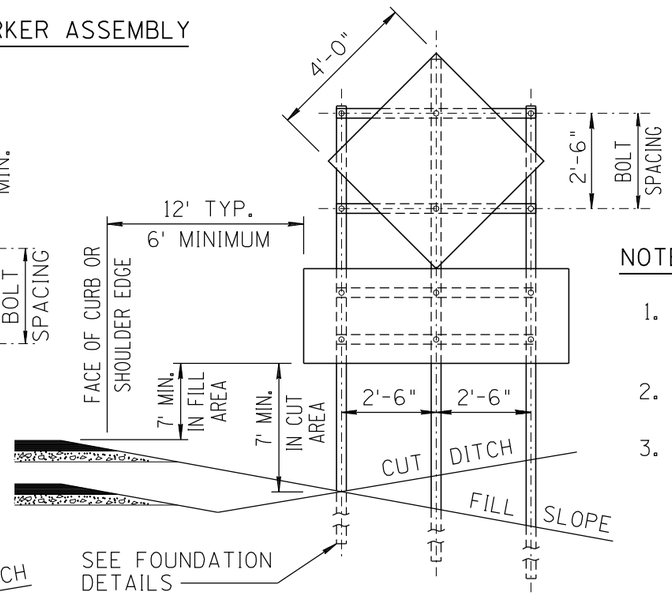
YIELD SIGN



WARNING SIGN
WITHOUT PLAQUE



WARNING SIGN
WITH SMALL AUXILIARY PLAQUE
(LESS THAN 8 SQUARE FEET)



WARNING SIGN
WITH LARGE AUXILIARY PLAQUE
(8 SQUARE FEET OR MORE)

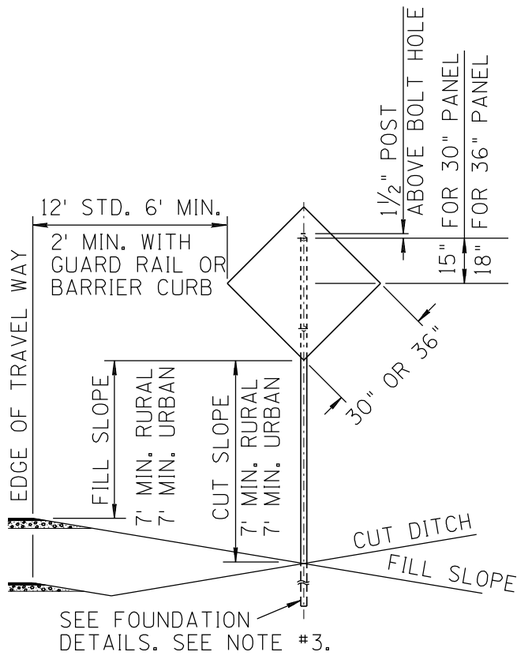
NOTES:

1. SEE FHWA STANDARD HIGHWAY SIGNS BOOKLET FOR PANEL BOLT HOLE SPACING NOT SHOWN.
2. DETERMINE POST SIZE FROM SQUARE TUBE SELECTION CHART.
3. OFFSET FROM FACE OF CURB OR SHOULDER EDGE MAY BE ADJUSTED DUE TO FIELD CONDITIONS.

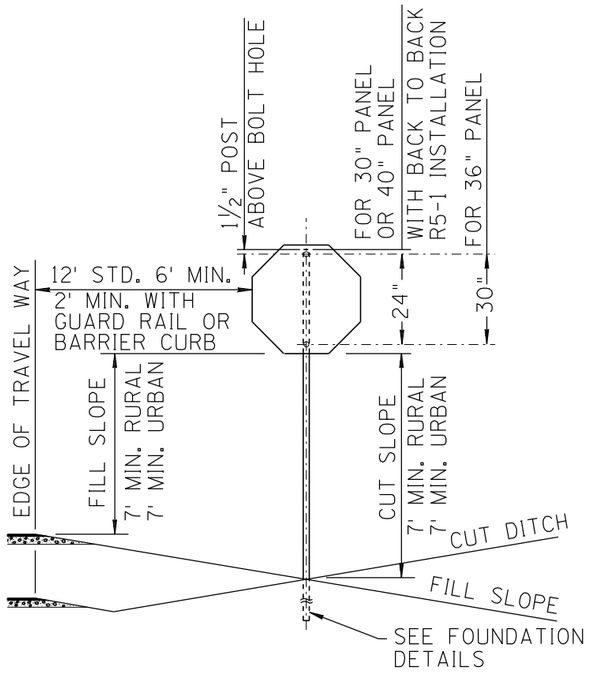
NOT TO SCALE

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	REVISED SIGN DIMENSIONS, ADDED TWO NEW DRAWINGS, ADDED NEW BORDER.	L. LOPEZ	10/10

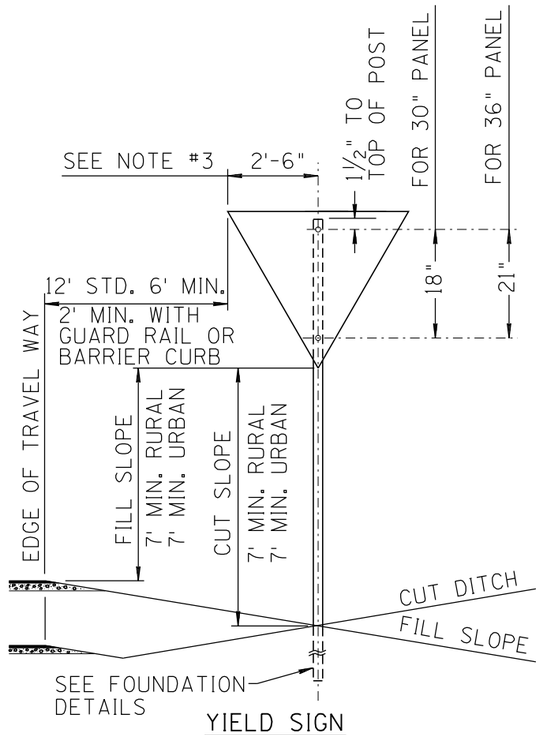
DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 10/10
APPROVED FOR DISTRIBUTION **ON FILE**	OFFSETS, CLEARANCES AND MOUNTING DETAILS FOR WARNING, REGULATORY AND MARKER SIGNS ON FREEWAYS	DRAWING NO. S-3
		SHEET NO. 2 OF 4



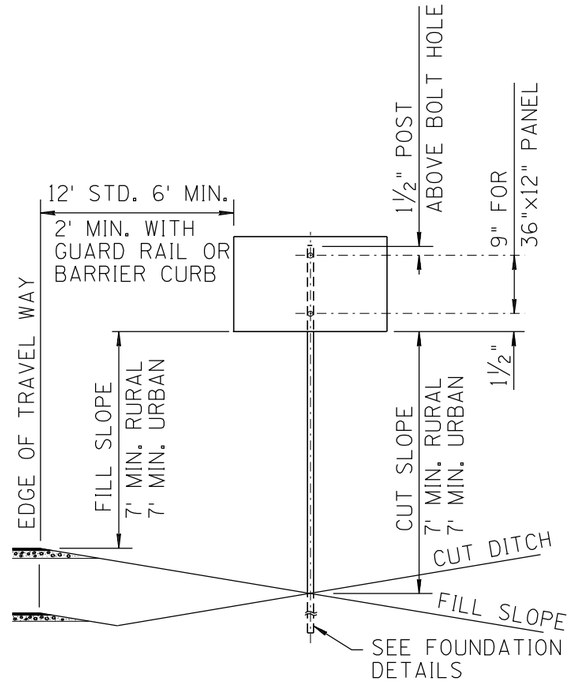
WARNING SIGN



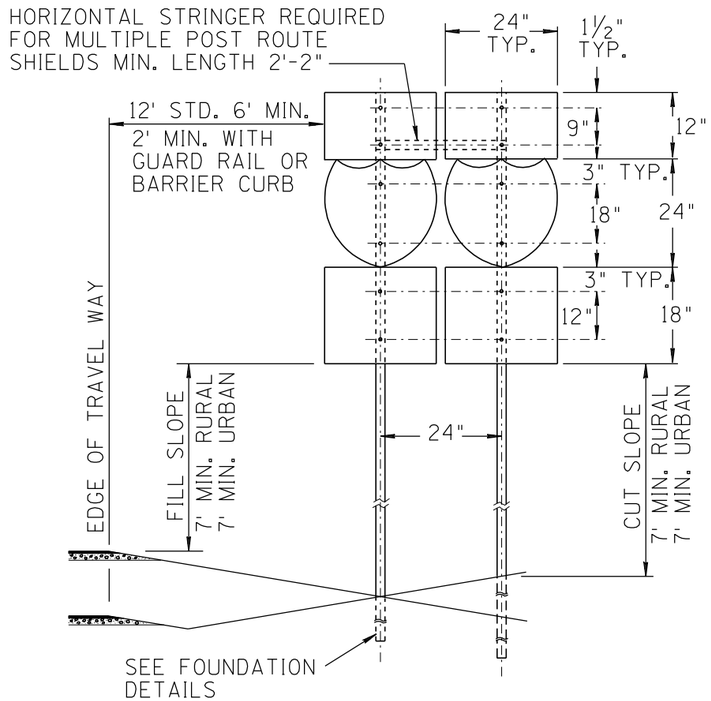
REGULATORY (STOP) SIGN



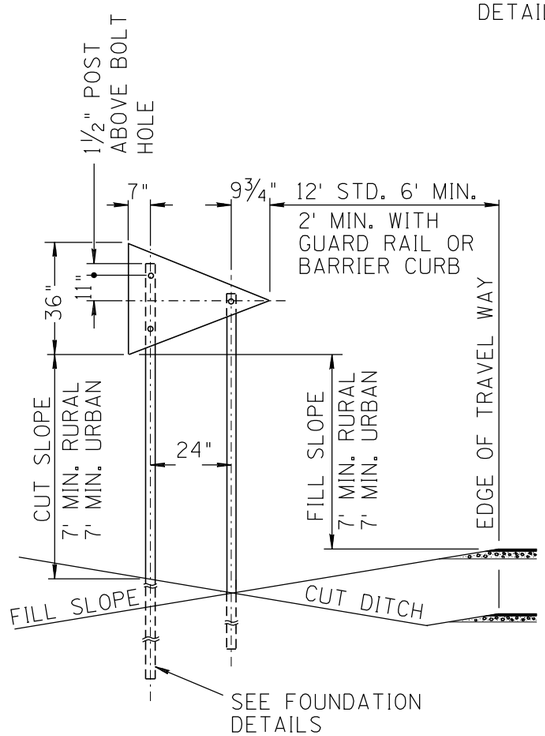
YIELD SIGN



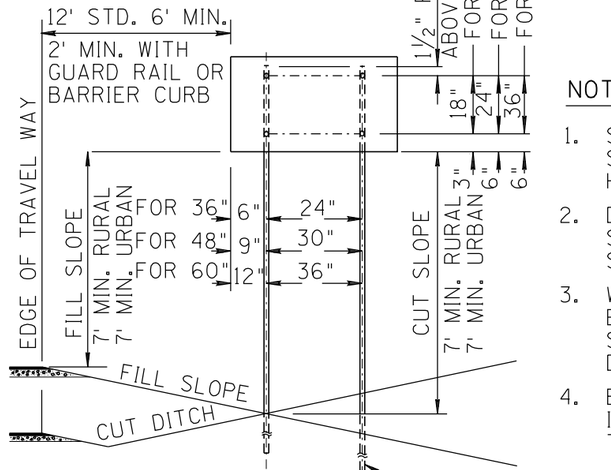
REGULATORY SIGN
SINGLE POST



MULTIPLE ROUTE MARKER



NO PASSING PENNANT



REGULATORY SIGN
TWO POST

NOTES:

1. SEE FHWA STANDARD HIGHWAY SIGNS BOOKLET FOR PANEL BOLT HOLE. SPACING NOT SHOWN.
2. DETERMINE POST SIZES FROM SQUARE TUBE SELECTION CHART. SEE STD DRAWING S-1.
3. WARNING AND YIELD SIGNS ARE EXCEPTED FROM WIDTH LIMITATION SET BY NOTE #1 ON STANDARD DRAWING S-1, SHEET 1 OF 3.
4. BACK TO BACK SIGNS SHALL BE INSTALLED WITH PANELS CENTERED TO EACH OTHER.

NOT TO SCALE

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	RURAL SIGN HEIGHT CHANGE, ADDED NOTES	L. LOPEZ	1/10

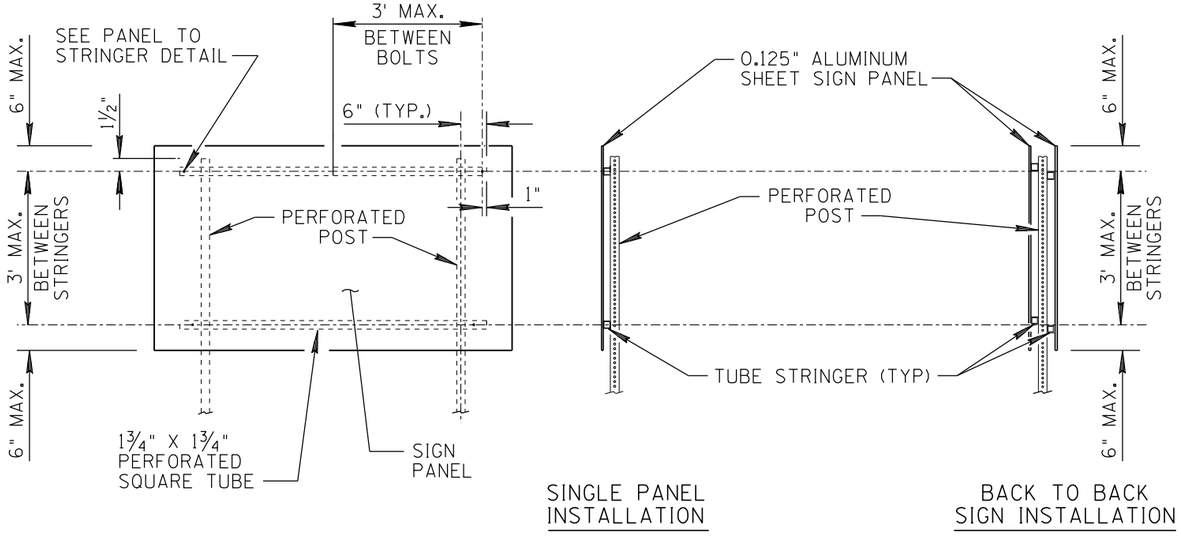
DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS
APPROVED FOR DISTRIBUTION **ON FILE**	OFFSETS, CLEARANCES AND MOUNTING DETAILS FOR SIGNS ON NON-FREEWAYS RAMPS AND CROSSROADS

REVISION 1/10
DRAWING NO. S-3
SHEET NO. 3 OF 4

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	CORRECTED STD DRAWING REFERENCE NUMBERS	L. LOPEZ	1/10
3			
4			

GUIDE SIGN POST SPACING
(NOT FOR USE WITH WARNING, REGULATORY OR MARKER PANELS)

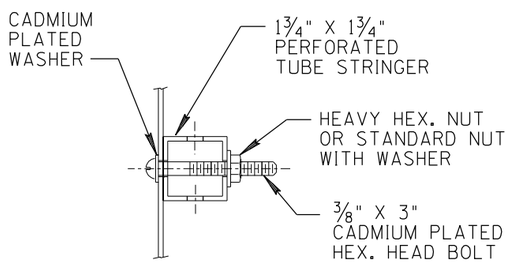
PANEL WIDTH	3'	4'	5'	6'	7'	8'	9'	10'
TWO POSTS SPACING (A)	1'-10"	2'-6"	3'-0"	3'-8"	4'-2"	4'-10"	5'-4"	6'-0"
BOLTS TO PANEL (PER STRINGER)	—	—	3	3	3	3	4	4
LENGTH OF EACH STRINGER	—	—	4'-0"	4'-8"	5'-2"	5'-10"	6'-4"	7'-0"
THREE POSTS SPACING (B)	—	—	1'-9"	2'-1"	2'-5"	2'-10"	3'-2"	3'-6"
BOLTS TO PANEL (PER STRINGER)	—	—	3	3	3	4	4	4
LENGTH OF EACH STRINGER	—	—	4'-6"	5'-2"	5'-10"	6'-8"	7'-4"	8'-0"



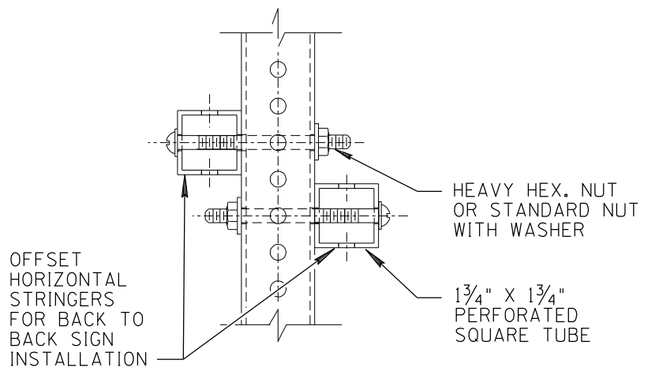
SINGLE PANEL INSTALLATION

BACK TO BACK SIGN INSTALLATION

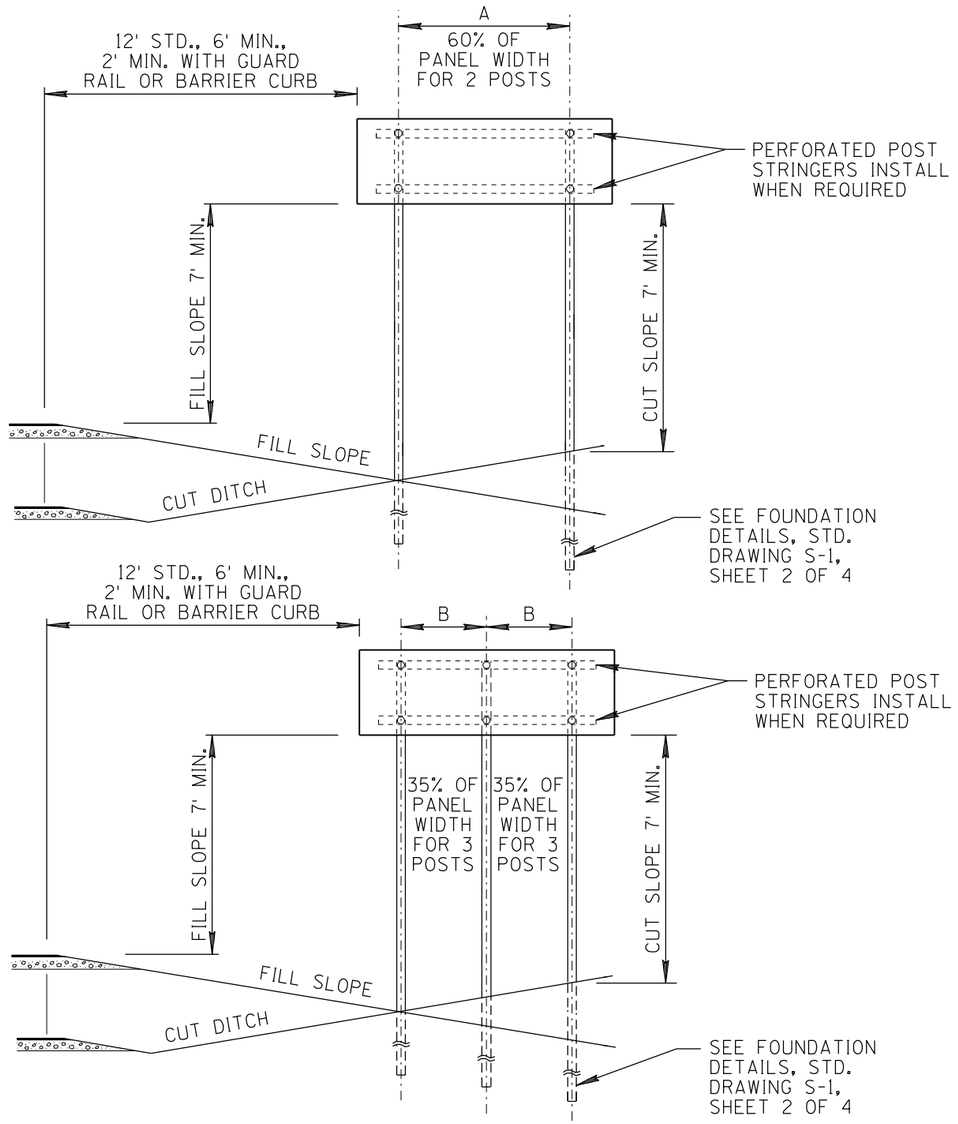
STRINGER DETAILS FOR GUIDE SIGNS
(5 FT. - 10 FT. WIDE)



PANEL TO STRINGER OR POST CONNECTION
TOP VIEW



STRINGER TO POST CONNECTION
SIDE VIEW



GUIDE SIGN

NOTES:

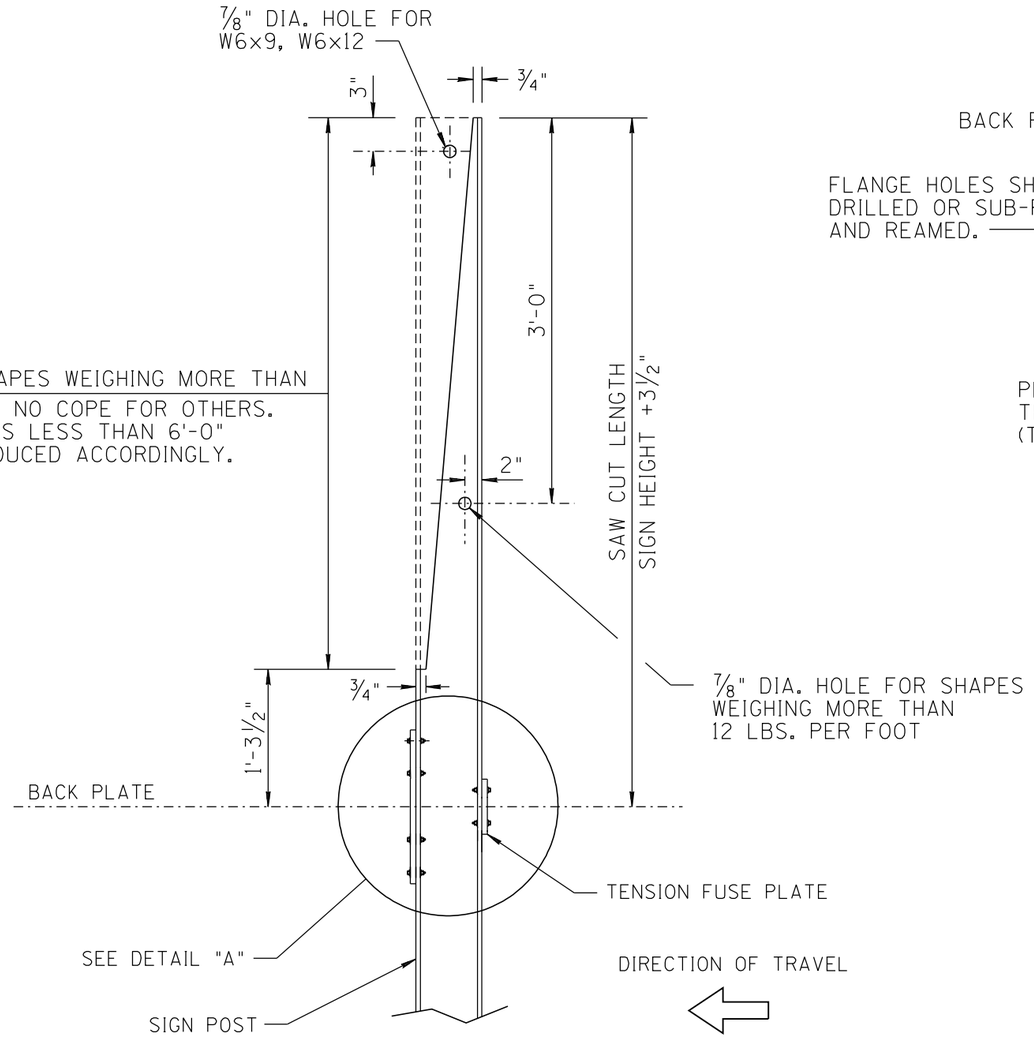
1. ALL FLAT SHEET ALUMINUM PANELS SHALL BE CONSTRUCTED WITHOUT SPLICES IN THE ALUMINUM.
2. REFLECTIVE SHEETING SPLICES ARE NOT PERMITTED IF MINIMUM DIMENSION OF THE SIGN IS 4' OR LESS.

NOT TO SCALE

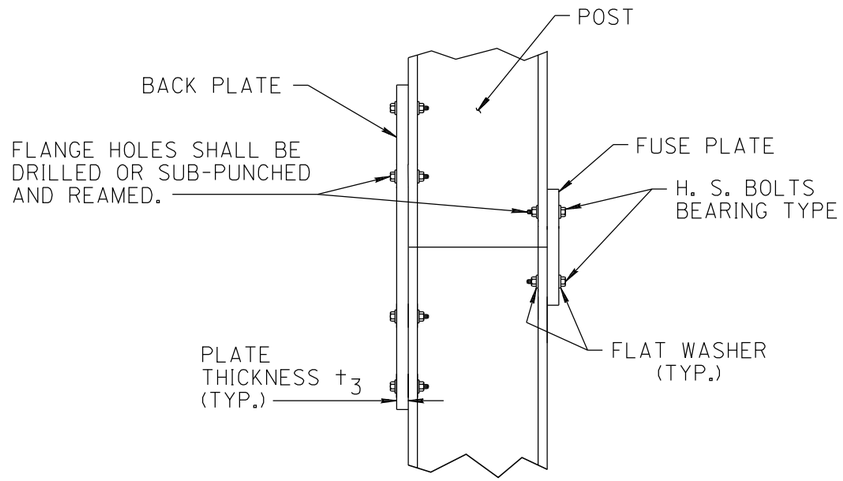
DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 1/10
APPROVED FOR DISTRIBUTION **ON FILE**	OFFSETS, CLEARANCE, AND MOUNTING DETAILS FOR SQUARE TUBE POSTS	DRAWING NO. S-3 SHEET NO. 4 OF 4

1/31/2010 V:\Traffic\Dev\tr_dev\english_stds\sign_mark\current_stds\S-03\S-03d.dgn

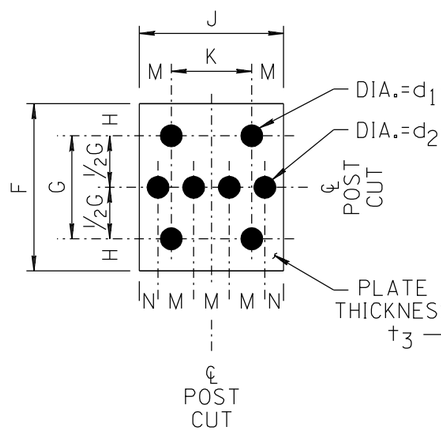
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	REMOVED W6x9 FROM POST SIZE TABLE.	L. LOPEZ	10/10



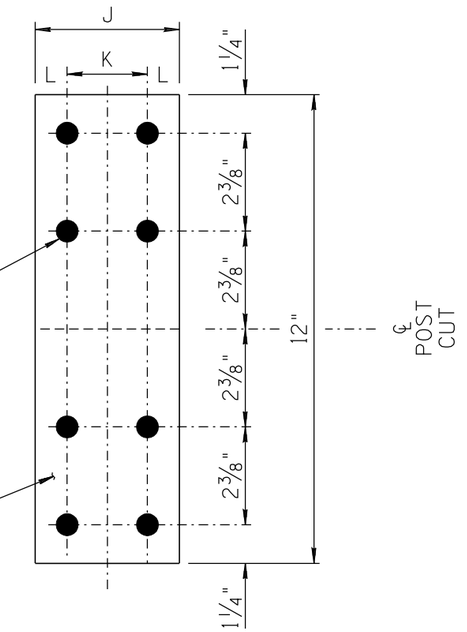
SIDE VIEW



DETAIL "A" HINGE



TENSION FUSE PLATE



BACK PLATE

(SEE TABLE FOR DIMENSIONS)

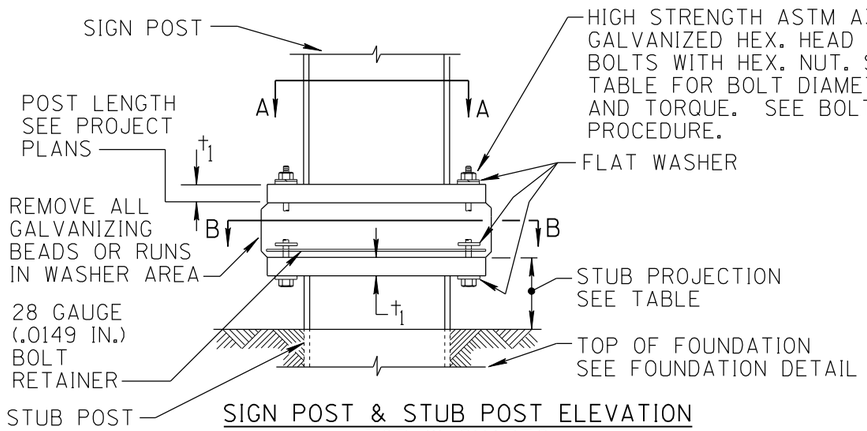
BACK PLATE AND TENSION FUSE PLATE DATA													
POST SIZE	DIMENSION FOR NEW POST SIZES												
	F	G	H	J	K	L	M	N	d_1	d_2	t_3	BOLT DIA.	BOLT LENGTH
W6x12	4 3/4"	2 1/2"	1 1/8"	4"	2 1/4"	7/8"	1"	1/2"	9/16"	3/4"	1/4"	1/2"	1 1/2"
W8x18	5"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	1 1/4"	3/4"	11/16"	1 1/16"	3/8"	5/8"	1 7/8"
W10x22	5 1/2"	2 1/2"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	1 3/8"	13/16"	13/16"	1 1/8"	1/2"	3/4"	2 1/8"
W12x26	5 1/2"	2 1/2"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	1 5/8"	13/16"	13/16"	1 5/16"	1/2"	3/4"	2 1/8"

ALL PLATE HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS; FLAME CUTTING WILL BE PERMITTED, PROVIDED ALL EDGES ARE GROUND.

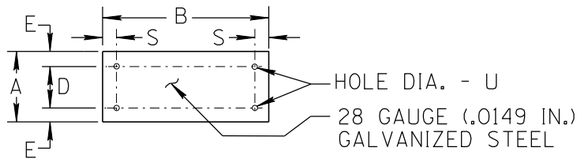
NOT TO SCALE

DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 10/10
APPROVED FOR DISTRIBUTION **ON FILE**	W SHAPE TENSION FUSE PLATE AND HINGE DETAILS	DRAWING NO. S-4
		SHEET NO. 1 OF 1

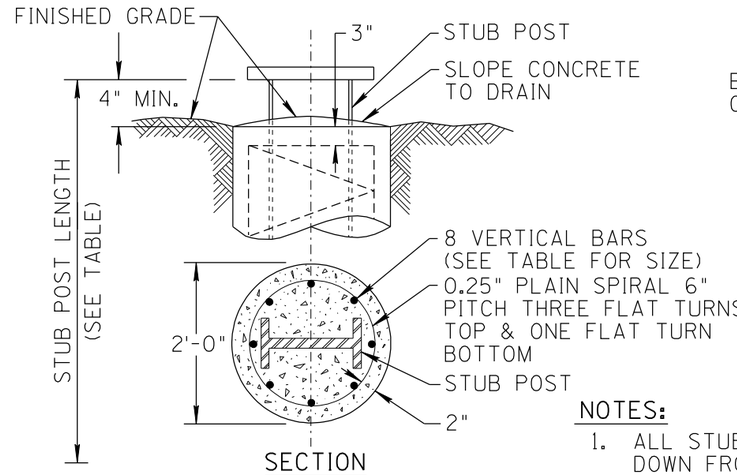
NO	DESCRIPTION OF REVISIONS	DATE	MADE BY
1	CHANGED BORDER		
2	RE-ISSUE		L. LOPEZ
3	REVISED AND RE-ISSUED, ADDED NEW BORDER.	8/00	L. LOPEZ
4	REVISED, BASE CONNECTION DATA TABLE, AND RE-ISSUED.	3/02	L. LOPEZ
		10/10	PARSONS BRINCKERHOFF
		1/11	L. LOPEZ



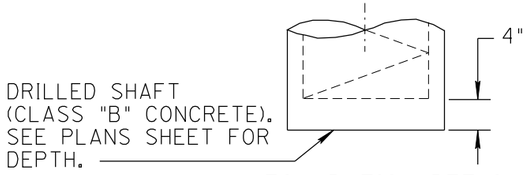
SIGN POST & STUB POST ELEVATION FOR W SHAPES



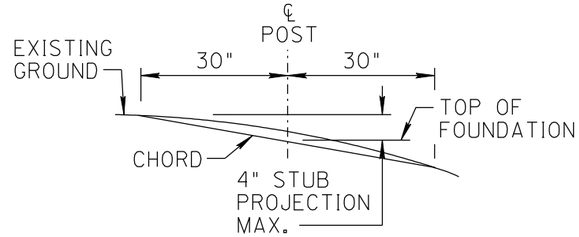
BOLT RETAINER FOR W SHAPE POST



SECTION



FOUNDATION DETAIL



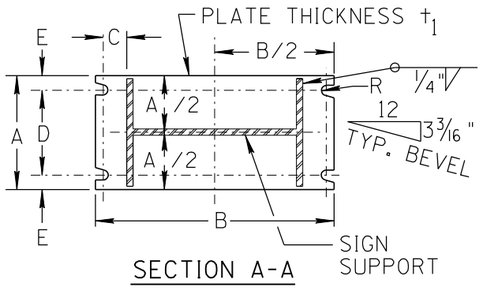
STUB PROJECTION LIMITS

NOTES:

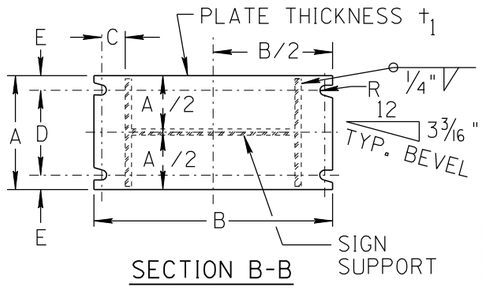
1. ALL STUB POSTS SHALL BE GALVINZED A MINIMUM OF 12" DOWN FROM THE BASE OF PLATE.
2. WHERE SOLID ROCK IS ENCOUNTERED, FOUNDATION SHALL BE PLAN DEPTH OR EXTENDED 2' MINIMUM INTO THE ROCK.
3. ALL PLATES SHALL BE ASTM A572 GRADE 50. ALL PLATE HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAWCUTS; FLAME CUTTING WILL BE PERMITTED, PROVIDED ALL EDGES ARE GROUND SMOOTH.

PROCEDURE FOR BOLTING & ASSEMBLY OF BASE CONNECTION

1. ASSEMBLE POST TO STUB WITH BOLTS AND WITH ONE FLAT WASHER ON EACH BOLT BETWEEN PLATES.
2. SHIM AS REQUIRED TO PLUMB POST. (4 SHIMS PER BOLT MAXIMUM)
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" TO 15" WRENCH TO BED WASHERS AND SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN BOLTS IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE (SEE TABLE). TIGHTEN THE BOLTS IN THE BASE CONNECTION TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.
4. DO NOT BURR THREADS AT JUNCTION.

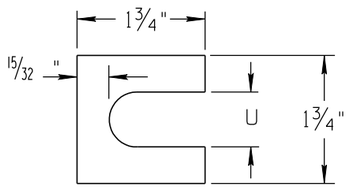


SECTION A-A



SECTION B-B

SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATION ON LEFT SHOULDER.



SHIM DETAIL

FURNISH 2 EACH 0.012"± THICK AND 2 EACH 0.032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO THE REQUIREMENTS OF A.S.T.M. - B - 36. FOUR SHIMS PER BOLT MAXIMUM.

BASE CONNECTION DATA TABLE

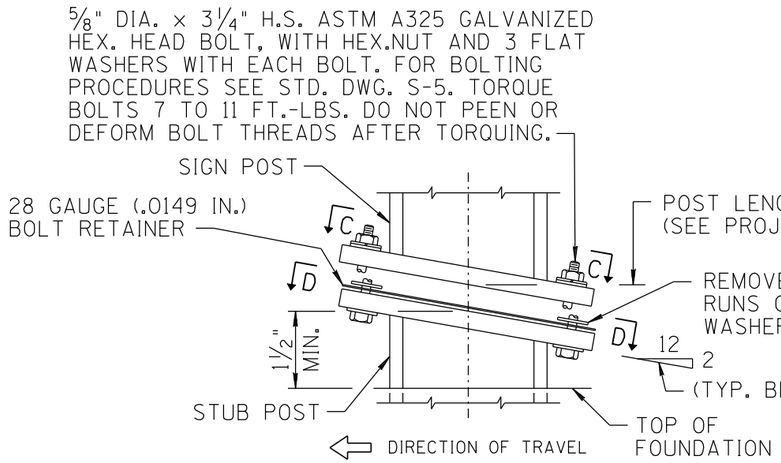
POST SIZE	BOLT SIZE AND TORQUE	DIMENSIONS FOR POST SIZES								
		A	B	C	D	E	R	t_1	S	U
W6×12	3/4" DIA. x 3 3/4" TORQUE = 19 TO 29 FOOT-LBS	5 3/4"	10"	1 1/4"	2 3/4"	1 1/2"	13/32 "	1"	3/4"	13/16 "
W8×18	1" DIA. x 4 3/4" TORQUE = 19 TO 29 FOOT-LBS	5 3/4"	12 1/8"	1 1/4"	2 3/4"	1 1/2"	17/32 "	1 3/8"	3/4"	1 1/16 "
W10×22	1 1/8" DIA. x 5 1/2" TORQUE = 31 TO 46 FOOT-LBS	6 1/2"	14 5/8"	1 3/8"	3 1/2"	1 1/2"	19/32 "	1 1/2"	7/8"	1 3/16 "

FOUNDATION DATA				APPROXIMATE QUANTITIES PER LIN. FT.		FOUNDATION DEPTH (SEE NOTE 2 ALSO)	
						SLOPES ≤ 4:1	SLOPES > 4:1
POST SIZE	STUB LENGTH	STUB PROJECTION	VERTICAL BAR SIZE	CONC. CU. YD.	STEEL LBS.	TWO, THREE OR FOUR POSTS	TWO, THREE OR FOUR POSTS
W6×12	2'-0"	3"	#5	0.116	8.9	6'-0"	6'-0"
W8×18	2'-6"	3"	#7	0.116	16.3	7'-0"	7'-6"
W10×22	3'-0"	2 1/2"	#9	0.116	26.5	8'-0"	8'-6"

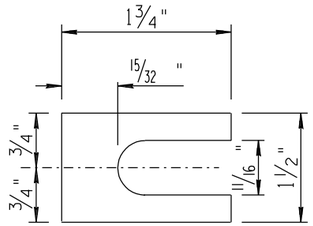
NOT TO SCALE

DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 1/11
APPROVED FOR DISTRIBUTION **ON FILE**	BREAKAWAY POST DETAILS FOR W SHAPE GUIDE SIGNS	DRAWING NO. S-5
		SHEET NO. 1 OF 1

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	1/11
2	REVISED AND RE-ISSUED. ADDED NEW BORDER.	PARSONS BRINCKERHOFF	10/10
3	REVISED SIGN POST AND STUB POST ELEVATION CALLOUT. REVISED TENSION FUSE PLATE.	L. LOPEZ	2/02
4	REVISED	L. LOPEZ	1/11

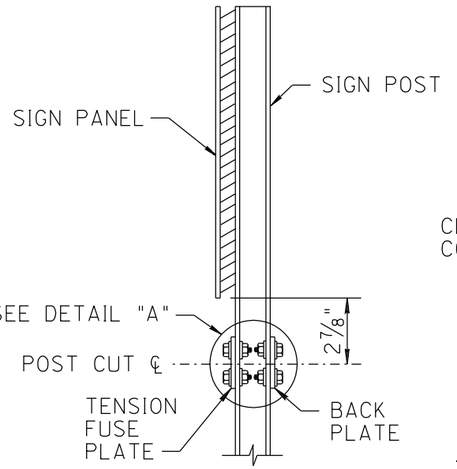


SIGN POST AND STUB POST ELEVATION

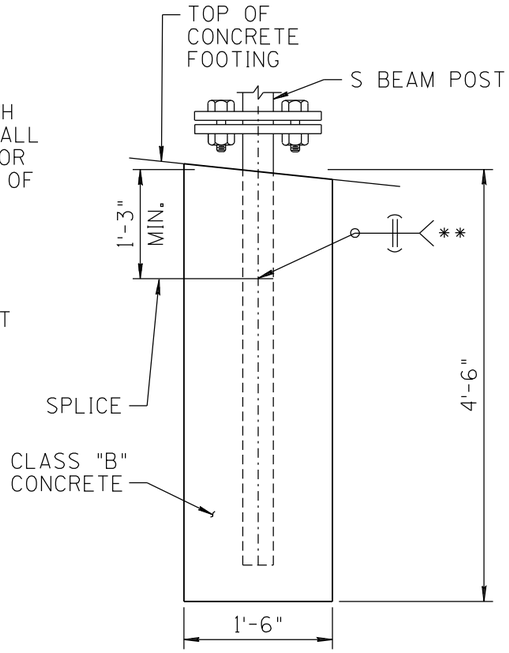


FURNISH 2 EACH 0.012"± THICK AND 2 EACH 0.032"± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO THE REQUIREMENTS OF A.S.T.M. B36/B36M-95

SHIM DETAIL

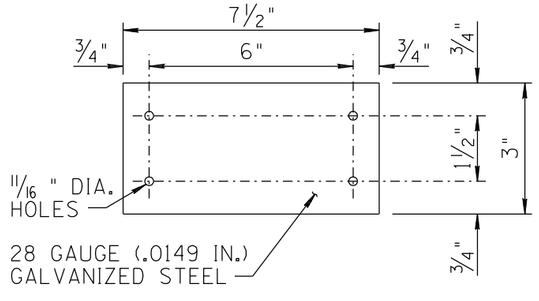


POST SHALL BE SAW CUT BEFORE GALVANIZING

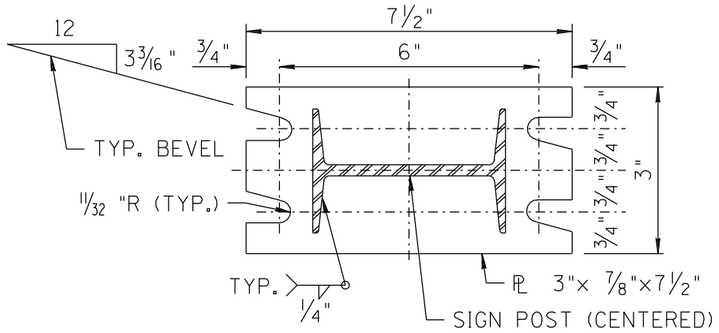


PERMISSIBLE SHOP SPLICE

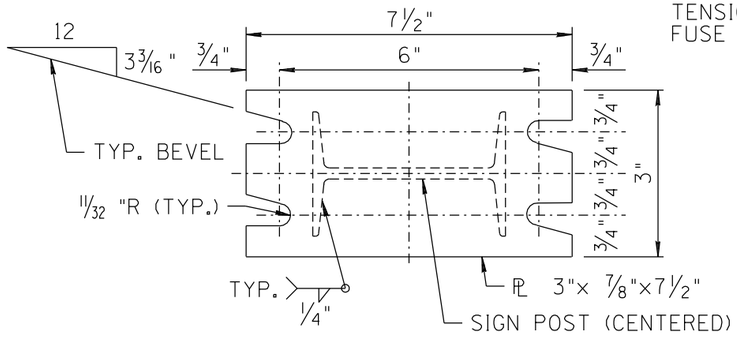
ALL SHOP SPLICES SHALL BE APPROVED BY THE ENGINEER. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS-1.1 LATEST EDITION.



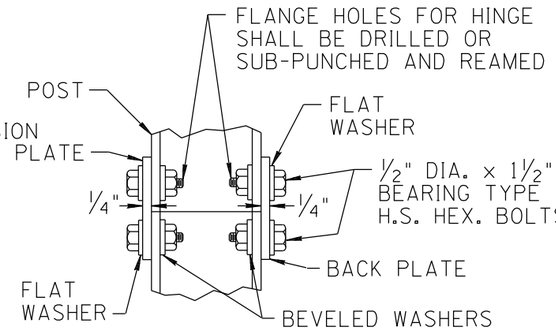
BOLT RETAINER



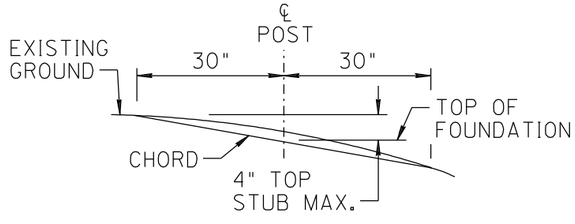
SECTION C-C



SECTION D-D

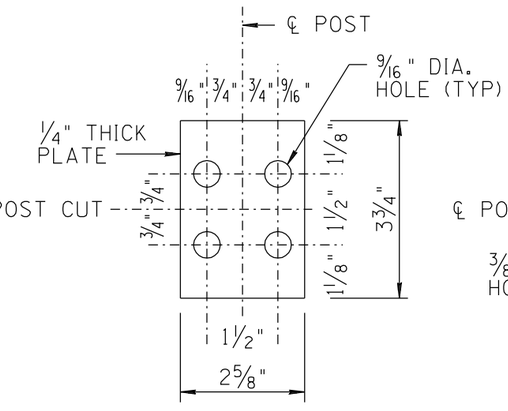


DETAIL "A" HINGE



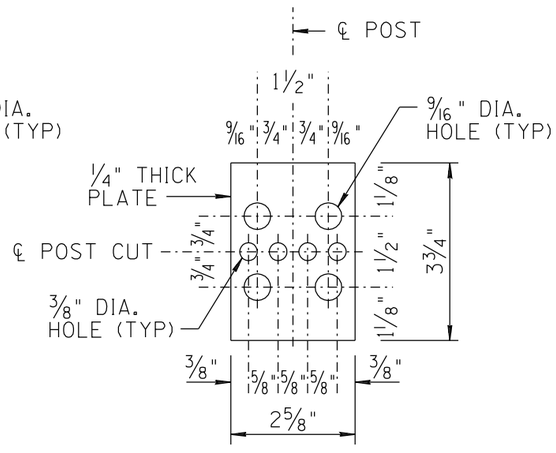
STUB PROJECTION LIMITS

SIDE VIEW OF POST



BACK PLATE

(S4x7.7)



TENSION FUSE PLATE

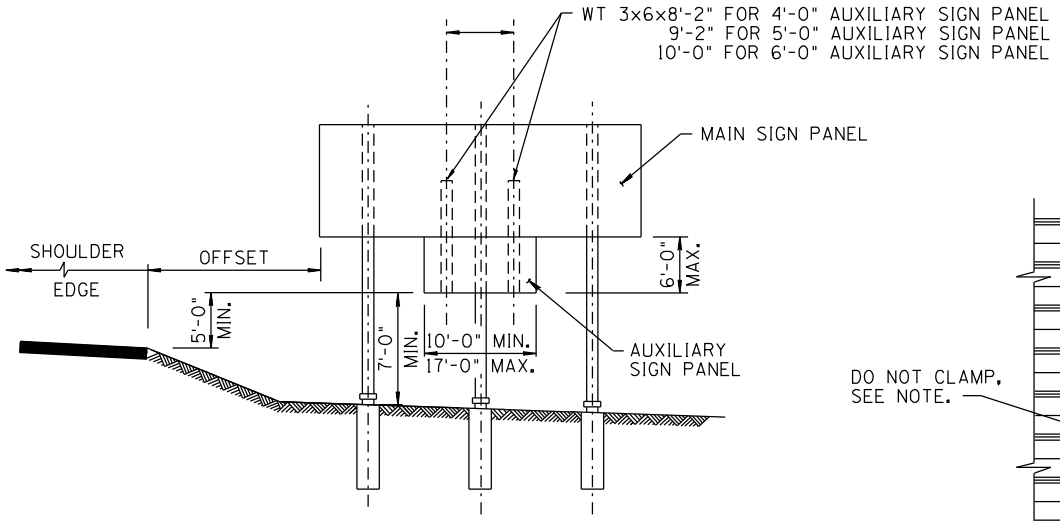
NOTES:

1. SECTIONS SHOWN ARE FOR INSTALLATIONS ON RIGHT SHOULDER AND IN GORE. PLATE SLOT BEVELS ARE OPPOSITE HAND FROM THAT SHOWN FOR INSTALLATIONS ON LEFT SHOULDER.
2. ALL PLATES SHALL BE ASTM A572 GRADE 50. ALL PLATE HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS; FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND.

NOT TO SCALE

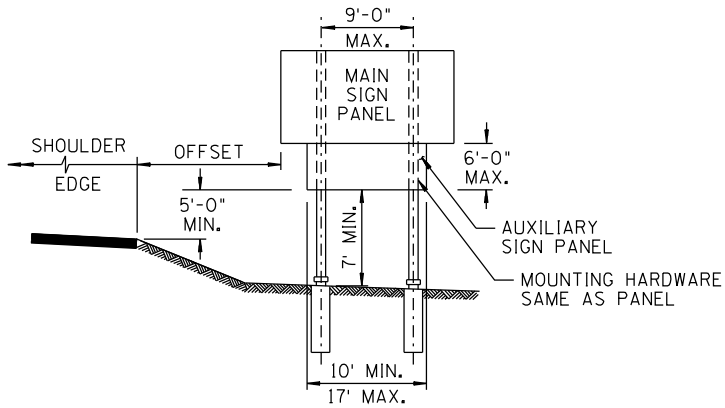
DESIGN APPROVED **SIGNATURES**	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNING & MARKING STANDARD DRAWINGS	REVISION 1/11
APPROVED FOR DISTRIBUTION **ON FILE**	BREAK-AWAY POST DETAILS S4x7.7	DRAWING NO. S-6
		SHEET NO. 1 OF 1

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	ADDED CALL OUT TO "REAR ELEVATION", REVISED NOTE	L. LOPEZ	6/06
3			
4			



THREE POSTS SIGN & TWO POST SIGN

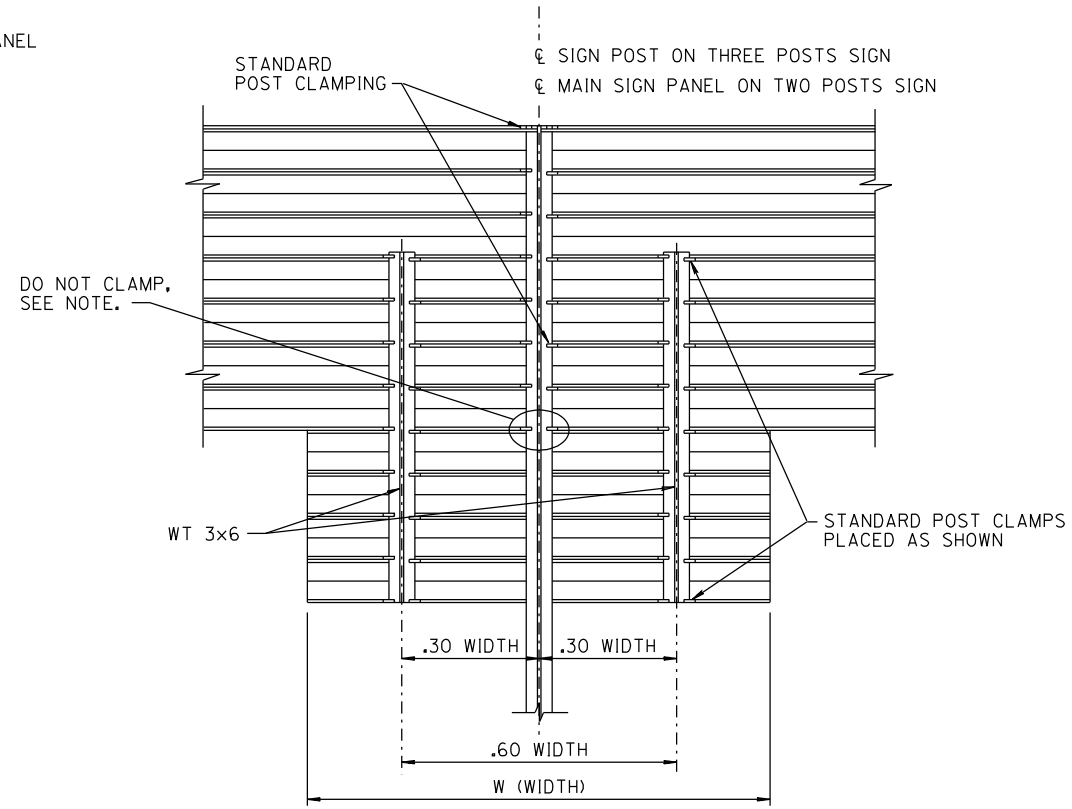
WITH SPACING GREATER THAN WIDTH OF AUXILIARY SIGNS MINUS 1'-0"



TWO POSTS SIGN

POST SPACING LESS THAN WIDTH OF AUXILIARY SIGNS MINUS 1'-0"

WT 3x6 SHALL BE A.S.T.M. A36/A36M-00 STEEL GALVANIZED TO CONFORM TO THE REQUIREMENTS OF A.S.T.M. A123/A123M-97a(1999)e1



REAR ELEVATION

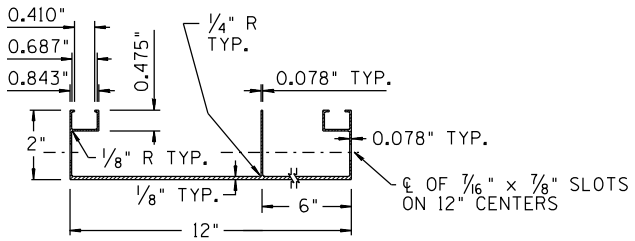
NOTE:

DO NOT CLAMP AUXILIARY SIGN TO THE MIDDLE POST ON THREE POST SIGNS.

NOT TO SCALE

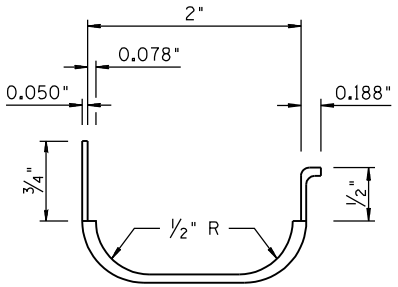
DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 6/06
APPROVED FOR DISTRIBUTION: SIGNATURE ON FILE	AUXILIARY SIGN INSTALLATION DETAILS	DRAWING NO. S-7

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	CORRECTIONS AND ADDITIONS	L. LOPEZ	8/06
3			
4			



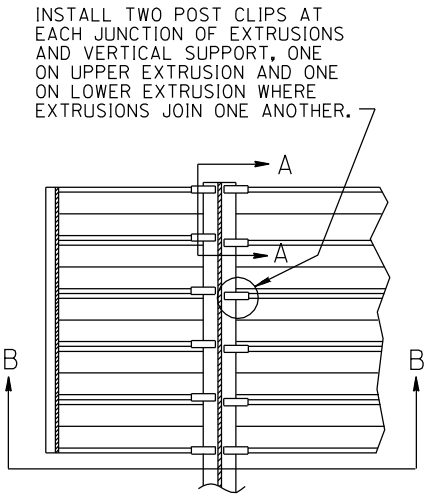
WT/LIN. FOOT 2.69 LBS. MINIMUM 12" EXTRUSION

SECTION VIEW OF EXTRUSION

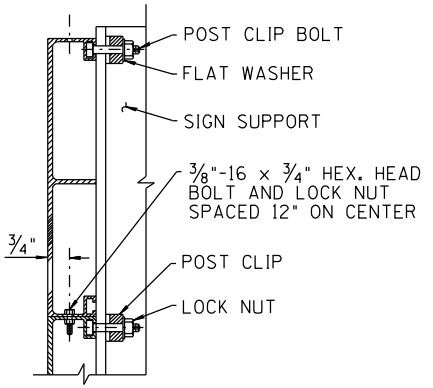


WT./LIN. FOOT = 0.276 LBS.

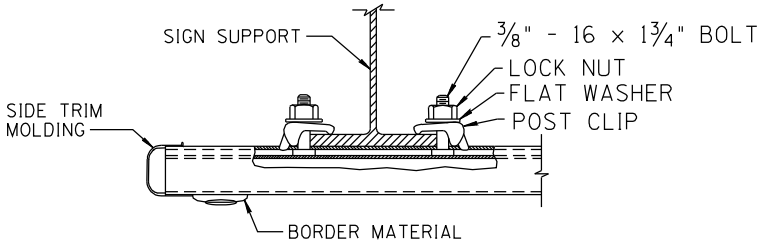
SIDE TRIM MOLDING DETAIL



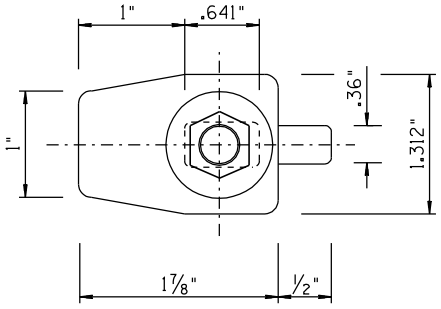
BACK ELEVATION OF SIGN PANEL



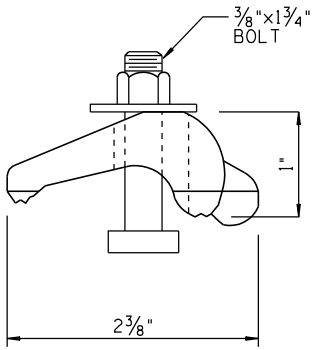
SECTION "A-A"
INSTALLATION DETAIL



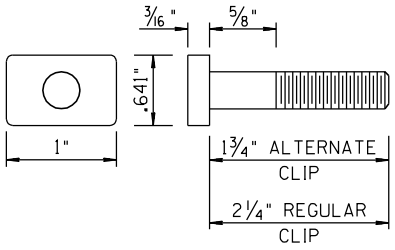
SECTION B-B
INSTALLATION DETAIL



PLAN



ELEVATION



POST CLIP BOLT DETAIL

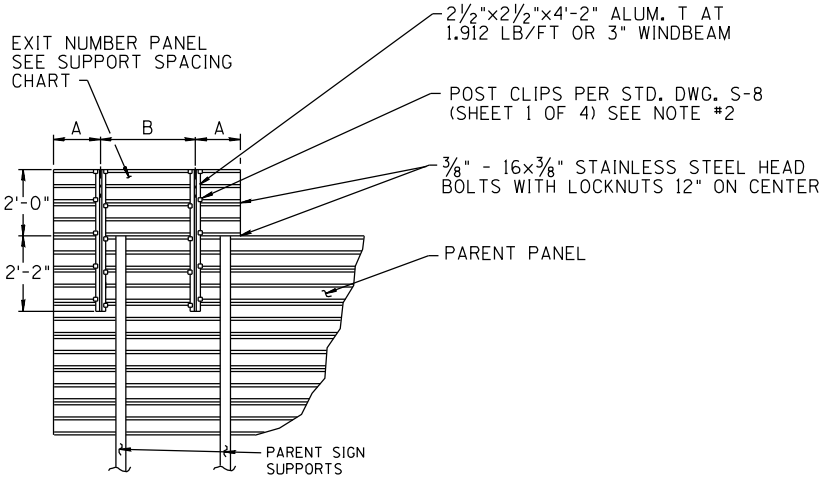
NOTE:

ALL BOLTS, WASHERS AND LOCK NUTS SHALL BE ALUMINUM ALLOY, STAINLESS STEEL, OR CADMIUM PLATED.

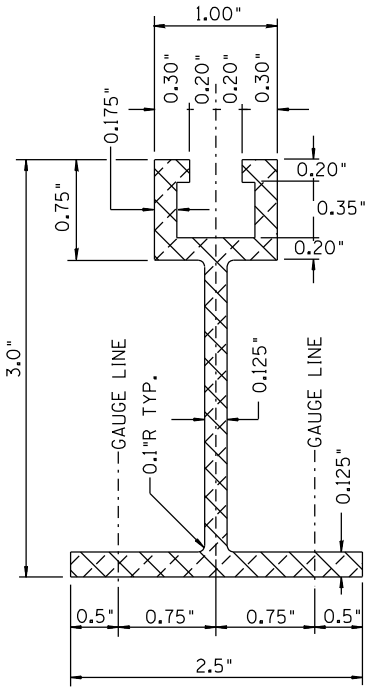
SHEET 1 OF 4
NOT TO SCALE

DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 8/06
APPROVED FOR DISTRIBUTION	ALUMINUM EXTRUSION SIGN PANEL DETAILS	DRAWING NO. S-8

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	CALL-OUT CORRECTIONS	L. LOPEZ	8/06
3			
4			

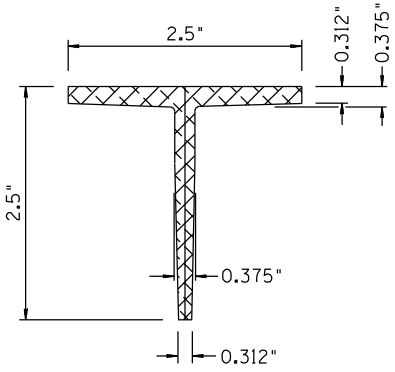


ALUMINUM EXTRUSION PANEL
REAR ELEVATION



WINDBEAM CROSS SECTION

EXIT NUMBER PANEL SUPPORT SPACING CHART		
PANEL WIDTH	DIMENSION A	DIMENSION B
7'	1'-0"	5'-0"
8'	1'-6"	5'-0"
9'	2'-0"	5'-0"
11'	2'-6"	6'-0"
14'	2'-6"	9'-0"
15'	3'-0"	9'-0"



ALUMINUM T SECTION

NOTES:

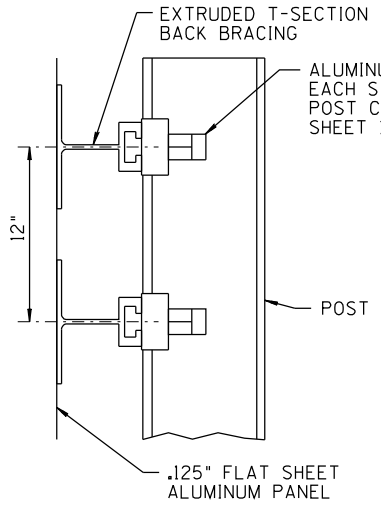
1. THE EXIT NUMBER PANEL SHALL BE MOUNTED WITH TWO (2) UPRIGHTS SO THAT ITS RIGHT EDGE IS EVEN WITH THE RIGHT EDGE OF THE PARENT SIGN OR REVERSE FOR LEFT HAND EXITS.
2. INSTALL TWO POST CLIPS AT EACH JUNCTION OF EXTRUSIONS AND VERTICAL SUPPORT, ONE ON UPPER EXTRUSION AND ONE ON LOWER EXTRUSION WHERE EXTRUSIONS JOIN ONE ANOTHER.
3. THE EXIT PANEL SUPPORT MAY BE MOVED 6" IF IT CONFLICTS WITH THE PARENT SIGN SUPPORT.
4. ALUMINUM SUPPORTS SHALL BE 6061-T6.

SHEET 2 OF 4
NOT TO SCALE

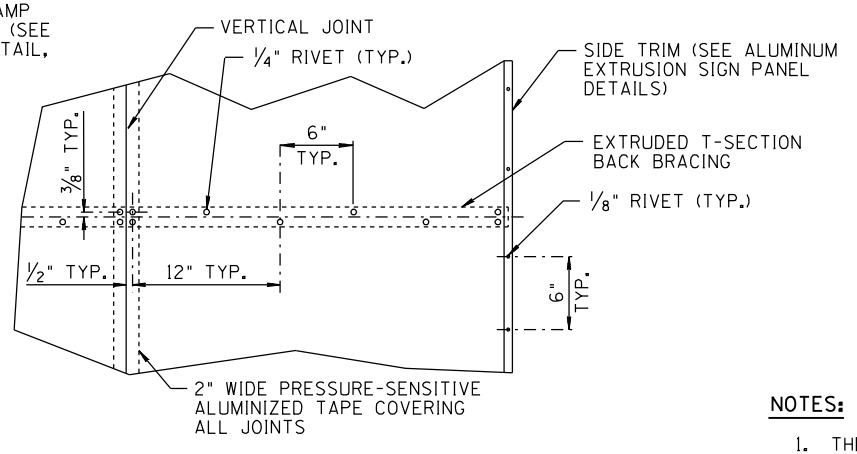
DESIGN APPROVED	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 8/06
APPROVED FOR DISTRIBUTION	ALUMINUM EXTRUSION EXIT NUMBER PANEL DETAIL	DRAWING NO. S-8

SIGNATURE ON FILE

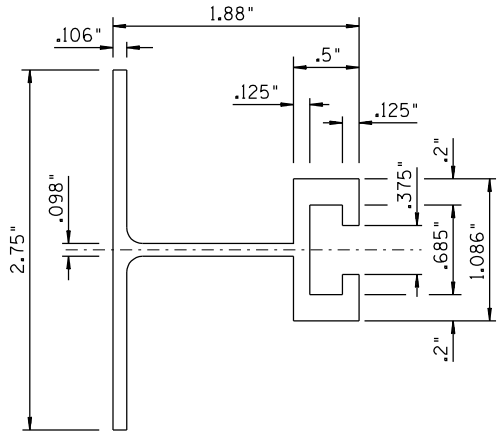
NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	REMOVED INCREMENT DETAIL, REVISED DETAILS & NOTES.	L. LOPEZ	8/06
3			
4			



PANEL DETAIL



RIVET SPACING DETAIL



EXTRUDED T-SECTION BACK BRACING

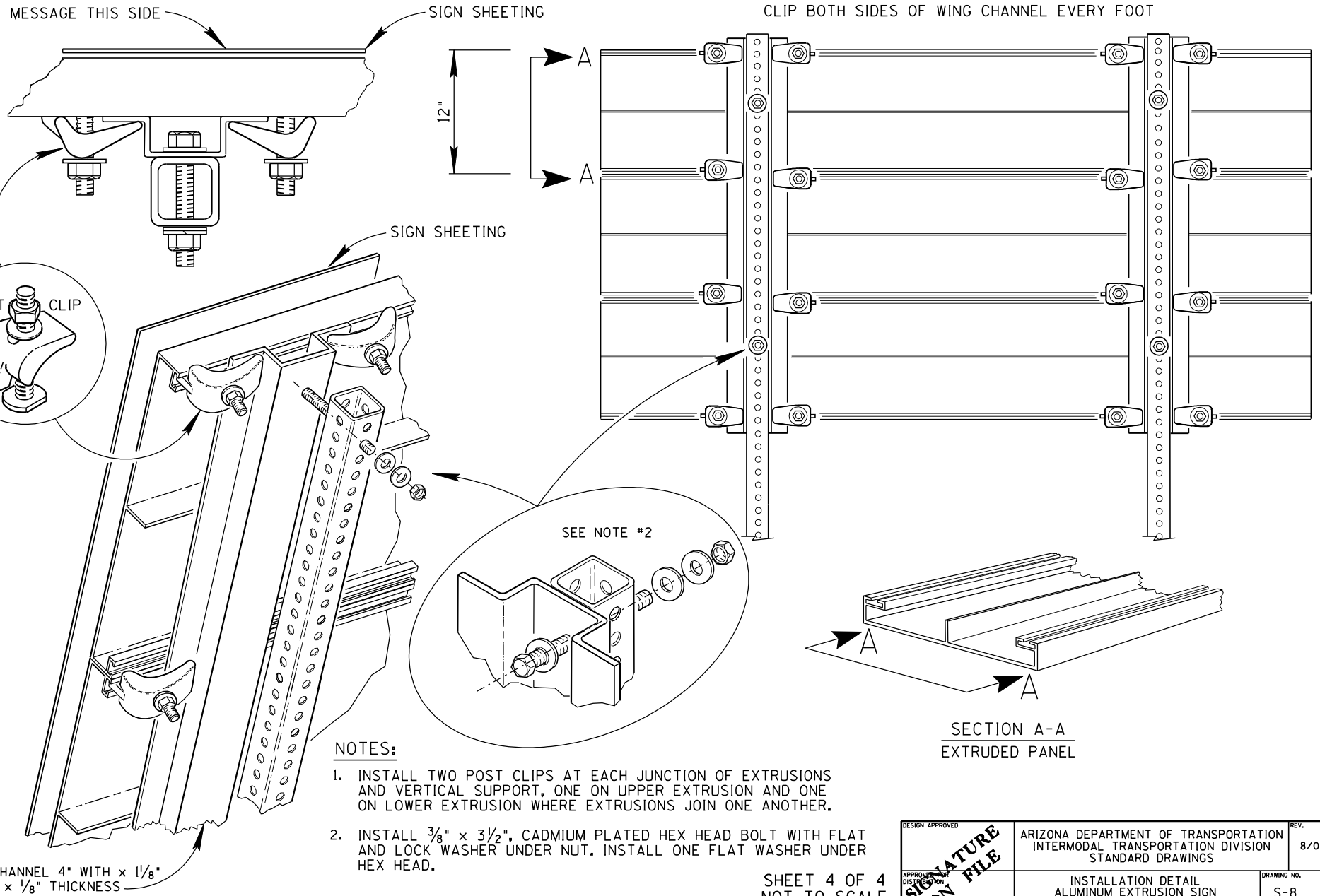
NOTES:

1. THE USE OF FLAT SHEET ALUMINUM PANELS ON "S" AND "W" POSTS SHALL BE RESERVED FOR SPECIAL CIRCUMSTANCES AND SHALL REQUIRE THE APPROVAL OF ADOT TRAFFIC DESIGN AND ADOT TRAFFIC OPERATIONS.
2. ALL DIMENSIONS ARE IN INCHES.
3. SIGNS LESS THAN 60" HIGH AND 120" WIDE SHALL BE MADE OF A SINGLE SHEET OF ALUMINUM.
4. SIGNS OVER 120" HIGH MAY HAVE HORIZONTAL AND VERTICAL JOINTS; HOWEVER, NO SHEET SHALL BE LESS THAN 24" WIDE OR 24" HIGH.
5. ALL HORIZONTAL JOINTS SHALL OCCUR AT EXTRUDED T-SECTIONS.
6. ALL SCREWS, BOLTS, AND LOCK WASHERS SHALL BE ALUMINUM ALLOY, STAINLESS STEEL, OR CADMIUM PLATED STEEL.
7. ONLY ALUMINUM RIVETS SHALL BE USED.
8. VERTICAL AND HORIZONTAL JOINTS TO BE BUTT JOINTED NOT OVERLAPPED.

SHEET 3 OF 4
NOT TO SCALE

DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 8/06
APPROVED FOR DISTRIBUTION	INSTALLATION DETAIL FLAT SHEET ALUMINUM PANEL ON BREAKAWAY POSTS	DRAWING NO. S-8

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE
1	RE-ISSUE	L. LOPEZ	2/02
2	EDIT NOTES & TITLE BLOCK	L. LOPEZ	8/06
3			
4			



SECTION A-A
EXTRUDED PANEL

NOTES:

1. INSTALL TWO POST CLIPS AT EACH JUNCTION OF EXTRUSIONS AND VERTICAL SUPPORT, ONE ON UPPER EXTRUSION AND ONE ON LOWER EXTRUSION WHERE EXTRUSIONS JOIN ONE ANOTHER.
2. INSTALL 3/8" x 3 1/2", CADMIUM PLATED HEX HEAD BOLT WITH FLAT AND LOCK WASHER UNDER NUT. INSTALL ONE FLAT WASHER UNDER HEX HEAD.

SHEET 4 OF 4
NOT TO SCALE

DESIGN APPROVED: SIGNATURE ON FILE	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION STANDARD DRAWINGS	REV. 8/06
APPROVED FOR DISTRIBUTION	INSTALLATION DETAIL ALUMINUM EXTRUSION SIGN TO PERFORATED POSTS	DRAWING NO. S-8